

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

IDENIX PHARMACEUTICALS LLC and
UNIVERSITA DEGLI STUDI DI
CAGLIARI,

Plaintiffs,

v.

GILEAD SCIENCES, INC.,

Defendant.

TGF CEVGF RWDNKE XGTUQP

C.A. No. 14-846-LPS

PLAINTIFFS' POST-TRIAL BRIEF

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TABLE OF CONTENTS

	Page
NATURE AND STAGE OF THE PROCEEDINGS	1
ARGUMENT	2
I. THE COURT SHOULD EXERCISE ITS DISCRETION TO ENHANCE DAMAGES.....	2
A. This Is An Egregious Case Of Willful Misconduct.....	2
B. The <i>Read</i> Factors Support Enhancement.....	8
1. Gilead Deliberately Copied Idenix's Patent, Tried To Conceal Its Misconduct, And Took Advantage Of Its Malfeasance For Years Without Seeking A License	9
2. Gilead Acted Without A Good-Faith Belief Of Non-Infringement Or Invalidity.....	11
3. Gilead's Litigation Conduct Supports Enhancement.....	12
4. Gilead Is A Multi-Billion-Dollar Company With Large Cash Reserves Due In Large Part To The Enormous Profits Of Its Infringing Products	14
5. The Case Was Not Close	15
II. THE COURT SHOULD AWARD A HIGHER ONGOING ROYALTY	17
A. Changes In Bargaining Positions Support A Higher Ongoing Royalty Rate	18
B. The <i>Georgia-Pacific</i> Factors Support A Higher Ongoing Royalty Rate	19
C. Gilead's Post-Judgment Willfulness Supports A Higher Ongoing Royalty Rate	20
D. The Court Should Award Royalties For Gilead's Sales Of Epclusa®	22
III. THE COURT SHOULD EXERCISE ITS DISCRETION TO AWARD FEES	23
IV. PREJUDGMENT INTEREST SHOULD USE THE PRIME RATE.....	23
V. THE PARTIES AGREE THAT SUPPLEMENTAL DAMAGES THROUGH JUDGMENT AND POST-JUDGMENT INTEREST ARE APPROPRIATE.....	25
CONCLUSION.....	25

TABLE OF AUTHORITIES

	Page
CASES	
<i>ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc.</i> , 694 F.3d 1312 (Fed. Cir. 2012).....	18
<i>Affinity Labs of Tex., LLC v. BMW N. Am., LLC</i> , 783 F. Supp. 2d 891 (E.D. Tex. 2011).....	20, 21
<i>Amado v. Microsoft Corp.</i> , 517 F.3d 1353 (Fed. Cir. 2008).....	18
<i>Amsted Indus. v. Buckeye Steel Castings Co.</i> , 24 F.3d 178 (Fed. Cir. 1994).....	7
<i>Arctic Cat Inc. v. Bombardier Recreational Prods., Inc.</i> , No. 14-cv-62369, 2016 WL 4249951 (S.D. Fla. July 27, 2016)	passim
<i>Arctic Cat Inc. v. Bombardier Recreational Prods., Inc.</i> , No. 14-cv-62369-BLOOM/Valle, 2017 U.S. Dist. LEXIS 1607 (S.D. Fla. Jan. 3, 2017)	20
<i>Ateliers de la Haute-Garonne v. Broetje Automation-USA Inc.</i> , 85 F. Supp. 3d 768 (D. Del. 2015).....	24
<i>Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., Inc.</i> , 670 F.3d 1171 (Fed. Cir. 2012), <i>aff'd in relevant part</i> , 682 F.3d 1003 (Fed. Cir. 2012)	18
<i>Becton Dickinson & Co. v. Tyco Healthcare Grp. LP</i> , No. 02-1694 GMS, 2008 WL 4745882 (D. Del. Oct. 29, 2008)	24
<i>Boston Sci. Corp. v. Cordis Corp.</i> , 838 F. Supp. 2d 259 (D. Del. 2012).....	18
<i>Comcast IP Holdings I, LLC v. Sprint Commc'ns Co.</i> , No. 12-cv-0205-RGA, 2015 WL 4730899 (D. Del. Aug. 10, 2015)	24
<i>Cordis Corp. v. Medtronic Vascular, Inc.</i> , 576 F. Supp. 2d 645 (D. Del. 2008).....	24

TABLE OF AUTHORITIES
(continued)

	Page
<i>DePuy Synthes Prods., LLC v. Globus Med., Inc.</i> , No. 11-652-LPS, 2014 U.S. Dist. LEXIS 61450 (D. Del. Mar. 25, 2014)	18, 19, 24, 25
<i>Dominion Res., Inc. v. Alstom Grid, Inc.</i> , No. 15-224, 2016 WL 5674713 (E.D. Pa. Oct. 3, 2016)	7, 10, 11, 13
<i>Dow Chem. Co. v. Nova Chems. Corp.</i> , No. 05-737-LPS, 2014 WL 1285508 (D. Del. Mar. 28, 2014)	24
<i>Edwards Lifesciences AG v. CoreValve, Inc.</i> , No. 08-91-GMS, 2011 WL 446203 (D. Del. Feb. 7, 2011)	24
<i>Energy Transp. Grp., Inc. v. Sonic Innovations, Inc.</i> , No. 05-422 (GMS), 2011 WL 2222066 (D. Del. June 7, 2011)	24
<i>Finjan Software, Ltd. v. Secure Computing Corp.</i> , No. 06-369 (GMS), 2009 WL 2524495 (D. Del. Aug. 18, 2009)	24
<i>Fisher-Price, Inc. v. Safety 1st, Inc.</i> , No. 01-051 GMS, 2008 WL 1976624 (D. Del. May 5, 2008)	25
<i>Halo Elecs., Inc. v. Pulse Elecs., Inc.</i> , 136 S. Ct. 1923 (2016)	passim
<i>Halo Elecs., Inc. v. Pulse Elecs., Inc.</i> , 831 F.3d 1369 (Fed. Cir. 2016)	2
<i>I/P Engine, Inc. v. AOL Inc.</i> , No. 2:11CV512, 2014 WL 309245 (E.D. Va. Jan. 28, 2014)	20, 21
<i>Imperium IP Holdings (Cayman), Ltd. v. Samsung Elecs. Co.</i> , No. 4:14-CV-371, 2016 WL 4480542 (E.D. Tex. Aug. 24, 2016)	9, 12
<i>IMX, Inc. v. LendingTree, LLC</i> , 469 F. Supp. 2d 203 (D. Del. 2007)	24
<i>InTouch Techs., Inc. v. VGo Commc'nns, Inc.</i> , 751 F.3d 1327 (Fed. Cir. 2014)	3
<i>Johns Hopkins Univ. v. CellPro</i> , 978 F. Supp. 184 (D. Del. 1997)	15

TABLE OF AUTHORITIES
(continued)

	Page
<i>King Instruments Corp. v. Perego</i> , 65 F.3d 941 (Fed. Cir. 1995).....	3
<i>LG Display Co. v. AU Optronics Corp.</i> , 722 F. Supp. 2d 466 (D. Del. 2010).....	24
<i>LG Elecs. U.S.A., Inc. v. Whirlpool Corp.</i> , 798 F. Supp. 2d 541 (D. Del. 2011).....	24
<i>Mondis Tech. Ltd. v. Chimei InnoLux Corp.</i> , 822 F. Supp. 2d 639 (E.D. Tex. 2011).....	20, 21
<i>nCUBE Corp. v. SeaChange Int'l, Inc.</i> , 313 F. Supp. 2d 361 (D. Del. 2004), <i>aff'd</i> , 436 F.3d 1317 (Fed. Cir. 2006)	9, 15, 16
<i>Octane Fitness, LLC v. ICON Health & Fitness, Inc.</i> , 134 S. Ct. 1749 (2014).....	2, 23
<i>PPC Broadband, Inc. v. Corning Optical Commc'n's RF, LLC</i> , No. 5:11-cv-761 (GLS/DEP), 2016 WL 6537977 (N.D.N.Y. Nov. 3, 2016).....	9, 11
<i>Pac. Furniture Mfg. v. Preview Furniture Corp.</i> , 800 F.2d 1111 (Fed. Cir. 1986).....	7
<i>Paice LLC v. Toyota Motor Corp.</i> , 504 F.3d 1293 (Fed. Cir. 2007).....	17
<i>Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.</i> , 762 F. Supp. 2d 710 (D. Del. 2011).....	passim
<i>Read Corp. v. Portec, Inc.</i> , 970 F.2d 816 (Fed. Cir. 1992).....	passim
<i>Siemens Med. Sols. USA, Inc. v. Saint-Gobain Ceramics & Plastics, Inc.</i> , 615 F. Supp. 2d 304 (D. Del. 2009).....	24
<i>St. Clair Intellectual Prop. Consultants, Inc. v. Fuji Photo Film Co.</i> , 674 F. Supp. 2d 555 (D. Del. 2009).....	24
<i>Stryker Corp. v. Davol Inc.</i> , 234 F.3d 1252 (Fed. Cir. 2000).....	7

TABLE OF AUTHORITIES
(continued)

	Page
<i>Telcordia Techs, Inc. v. Cisco Sys, Inc.,</i> 592 F. Supp. 2d 727 (D. Del. 2009).....	24
<i>Telcordia Techs., Inc. v. Cisco Sys., Inc.,</i> No. 04-876-GMS, 2014 WL 1457797 (D. Del. Apr. 14, 2014).....	18, 20
<i>Tristrata Tech., Inc. v. Mary Kay, Inc.,</i> 423 F. Supp. 2d 456 (D. Del. 2006).....	24
<i>TruePosition Inc. v. Andrew Corp.,</i> 568 F. Supp. 2d 500 (D. Del. 2008).....	24
<i>TruePosition Inc. v. Andrew Corp.,</i> 611 F. Supp. 2d 400 (D. Del. 2009), <i>aff'd</i> , 389 F. App'x 1000 (Fed. Cir. 2010)	9, 24
<i>Uniroyal, Inc. v. Rudkin-Wiley Corp.,</i> 939 F.2d 1540 (Fed. Cir. 1991).....	24
<i>W.R. Grace & Co.—Conn. v. Intercat, Inc.,</i> 60 F. Supp. 2d 316 (D. Del. 1999).....	24
<i>WBIP, LLC v. Kohler Co.,</i> 829 F.3d 1317 (Fed. Cir. 2016).....	12
<i>XpertUniverse, Inc. v. Cisco Sys., Inc.,</i> No. 09-157-RGA, 2013 WL 6118447 (D. Del. Nov. 20, 2013)	24
<i>XY, LLC v. Trans Ova Genetics, LC,</i> No. 13-cv-0876, 2016 WL 1391615 (D. Colo. Apr. 8, 2016)	18
STATUTES	
28 U.S.C. § 1961.....	25
35 U.S.C. § 102.....	2, 12, 13, 16
35 U.S.C. § 103.....	2, 12, 13, 16
35 U.S.C. § 112.....	2, 12, 16
35 U.S.C. § 284.....	2, 25

TABLE OF AUTHORITIES
(continued)

	Page
35 U.S.C. § 285.....	23
OTHER AUTHORITIES	
Fed. R. Civ. P. 54(d)(2).....	1
Fed. R. Civ. P. 59(e)	1

Pursuant to Fed. R. Civ. Proc. 59(e) and 54(d)(2), and the Joint Status Report (D.I. 520), Plaintiffs Idenix Pharmaceuticals LLC and Universita Degli di Cagliari (collectively, “Idenix”) move to alter or amend the judgment to grant: (1) enhanced damages; (2) ongoing royalties; (3) attorneys’ fees; (4) supplemental damages; and (5) pre- and post-judgment interest.

The law permits each of these remedies. “Enhanced damages are as old as U.S. patent law” and are justified where, as here, the infringer’s conduct has been deliberate and willful.

Halo Elecs., Inc. v. Pulse Elecs., Inc., 136 S. Ct. 1923, 1928 (2016). Although the jury award is substantial, the circumstances underlying it, including the extensive evidence showing textbook wrongdoing by a direct competitor, are not typical in infringement cases. They warrant exercise of the Court’s discretion to enhance damages. In addition, the Court should award an ongoing royalty that is higher than the jury’s 10% rate for past damages, given the changes in circumstances and willful nature of ongoing infringement. At least 14% would be appropriate.

The other requests are also warranted to make Idenix whole. Attorneys’ fees, a matter for the Court’s discretion, would compensate Idenix for particularly egregious positions that Gilead took that unnecessarily multiplied proceedings, especially on the eve of or during trial. For the remaining issues—supplemental damages and pre- and post-judgment interest—the parties largely agree on the relief to be awarded. Two disputes remain. For supplemental damages, the parties agree to include Gilead’s new drug Epclusa® but dispute how to account for it; Idenix proposes an approach like what the jury used. For prejudgment interest, Idenix proposes the well-accepted prime rate; Gilead proposes the inadequate T-bill rate, which should be rejected.

NATURE AND STAGE OF THE PROCEEDINGS

On December 1, 2013, Idenix filed suit against Gilead for infringement of Idenix’s ’597 and ’054 patents. (D.I. 1.) Prior to trial, and in order to narrow the issues, Idenix granted Gilead a covenant not to sue on the ’054 patent, leaving only the ’597 patent in the case. The ’597

patent claims methods of treating HCV by administering an effective amount of a 2'-methyl “up” ribonucleoside. Gilead advanced various 35 U.S.C. § 112 defenses; it then added 35 U.S.C. §§ 102/103 defenses after fact discovery closed and at trial still sought to change those defenses. The Court construed the claims twice, adopting Idenix’s proposals in full each time; twice denied Gilead’s motions for summary judgment; and denied all of Gilead’s *Daubert* motions seeking to exclude part or all of the opinions of six Idenix experts. On November 16, 2016, just days before the Pre-Trial Conference, Gilead conceded infringement of the ’597 patent.

Trial was held December 5-15, 2016. On December 15, 2016, the jury returned its verdict for Idenix on all issues. (D.I. 517.) The jury found willful infringement, rejected all of Gilead’s invalidity defenses as to all 15 asserted claims, and adopted Idenix’s royalty damages proposal, using a 10% royalty rate to award \$2.54 billion for past damages. On January 26, 2017, the Court entered judgment on the jury verdict. (D.I. 533.)

ARGUMENT

I. THE COURT SHOULD EXERCISE ITS DISCRETION TO ENHANCE DAMAGES

When infringement is found, “the court may increase the damages up to three times.” 35 U.S.C. § 284. To determine whether to enhance and by how much, courts consider all relevant facts “‘in light of the considerations’ underlying the grant of [a court’s] discretion.” *Halo*, 136 S. Ct. at 1932 (quoting *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S. Ct. 1749, 1756 (2014)). Idenix’s burden is the same as its burden to prove willful infringement, *i.e.*, proof by a preponderance of the evidence. *Id.* at 1934. Enhanced damages are warranted here.

A. This Is An Egregious Case Of Willful Misconduct

Under *Halo*, the jury’s willfulness finding is a significant basis for enhancement. *See* 136 S. Ct. at 1931; *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 831 F.3d 1369, 1381 (Fed. Cir. 2016) (on remand from the Supreme Court, further remanding for the district court to take into account

jury's willfulness finding). In finding that Gilead willfully infringed, the jury is presumed to have considered all of the facts, *see InTouch Techs., Inc. v. VGo Commc'ns, Inc.*, 751 F.3d 1327, 1355 (Fed. Cir. 2014), and found "that Gilead's conduct was reckless, willful, wanton, malicious, committed in bad faith, deliberate, consciously wrongful, flagrant, or—as it may be described—characteristic of a pirate." (D.I. 516 at 25.) As *Halo* instructs, enhanced damages are "designed as a 'punitive' or 'vindictive' sanction for egregious infringement behavior." 136 S. Ct. at 1932, 1935. An egregious case warranting enhancement is "typified by willful misconduct." *Id.* at 1934; *see id.* at 1932 ("egregious cases of culpable behavior").

In addition, the policies underlying the enhanced damages remedy warrant enhancement here. "[T]he underlying rationale" is one of "deterrence and punishment of the infringer, as well as 'protection of the integrity of the patent system.'" *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 762 F. Supp. 2d 710, 719 (D. Del. 2011) (citation omitted). The prospect of enhanced damages guards against infringers benefiting from a "'heads-I-win, tails-you-lose' position," where they have "nothing to lose, and everything to gain if [they] could count on paying only the normal, routine royalty non-infringers might have paid." *King Instruments Corp. v. Perego*, 65 F.3d 941, 951 n.6 (Fed. Cir. 1995) (citation omitted).

Consistent with the jury's finding, this record is chock-full of willful misconduct by Gilead and its predecessor Pharmasset. This misconduct began with Dr. Raymond Schinazi, Pharmasset's founder and executive director through 2005. He "ran the company," which was "his baby"; he was the "one making the decisions" and "direct[ing]" what was to be made at Pharmasset." (Trial Transcript ("Tr.") 649:2-10, 679:11-13, 691:7-18, 961:1-6.) Dr. Schinazi agreed to serve as a confidential consultant to Idenix from at least 1998 to 2002. (Tr. 408:17-409:1.) In that capacity, Dr. Schinazi admitted he obtained confidential information that Idenix

was developing 2'-methyl nucleosides for treating HCV and the “importance” of those nucleosides. (Tr. 584:16-18, 605:24-606:2.) In violation of his confidentiality obligations to Idenix, Dr. Schinazi further admitted he “shared” with Pharmasset Idenix’s proprietary discovery of pioneering treatments for HCV. (Tr. 584:16-585:3.)

After Dr. Schinazi shared Idenix’s confidential information with his staff, Pharmasset used it for its own gain. Pharmasset had originally been “targeting different therapeutic indications, so different targets, different drugs,” and “it was not a primary objective of Pharmasset to be working on 2'-methyl compounds.” (Tr. 479:10-15, 602:16-24 (Pharmasset “had [its] own derivatives that [it was] working on”)). But after acquiring Idenix’s confidential information, Pharmasset turned to 2'-methyl nucleosides for the first time. Dr. Schinazi directed Dr. Kyo Watanabe to look into why those nucleosides are active against HCV, because Dr. Schinazi did not understand how or why that class could be effective for treating HCV. (Tr. 560:20-25, 585:1-3, 588:8-590:5.) Soon thereafter, Pharmasset’s Dr. Abdalla Hassan (who reported to Dr. Watanabe) began making 2'-methyl nucleosides, and Pharmasset confirmed they were active. (Tr. 932:24-933:9, 938:22-24, 940:19-941:16, 964:24-965:15.) As Dr. Schinazi surmised, and the evidence showed, Dr. Watanabe “must have told” Dr. Hassan to make the 2'-methyl nucleosides. (PX-677.) Pharmasset was trading on information it should not have had.

After Idenix’s application became public in November 2001, Pharmasset did not change course, even though it knew it was treading on Idenix’s invention. Indeed, Dr. Schinazi explained at the time that there was “a patent conflict with Idenix over 2'-methyl compounds.” (Tr. 712:18-713:4.) He knew that any work by Pharmasset on 2'-methyl nucleosides was pointless because it “would be competing” with Idenix’s invention and that Pharmasset had “inside information” from Idenix. (PX-720; Tr. 598:2-602:24, 606:24-607:21, 651:14-655:15,

668:9-669:18; *id.* at 598:4-7 (Dr. Schinazi testifying that “obviously Idenix had 2'-methyl covered in their patent, so I was basically telling [Dr. Watanabe] not to work on 2'-methyl nucleosides because what’s the point, we would be competing with them”); *id.* at 713:25-714:1 (“patent complications”).) Dr. Schinazi also conceded that “these particular compounds belonged to Idenix.” (Tr. 596:21-597:2.) And he understood that “it would have been wrong if [Pharmasset scientists] made [these compounds] intentionally.” (Tr. 597:5-6.)

Nevertheless, Pharmasset continued to make them, eventually focusing on a 2'-methyl compound named PSI-6130 made by Jeremy Clark. (991:12-23, 995:2-13.) But Mr. Clark had Idenix’s patent application in his hand when he informed his supervisor of the idea for the compound. (Tr. 696:11-697:1.) Numerous witnesses confirmed that Mr. Clark’s compound (which led to sofosbuvir) fits within the class of compounds used in Idenix’s invention. (Tr. 611:4-8, 660:21-662:18, 894:4-7.) Indeed, Pharmasset’s meeting minutes referred to this compound as an “Idenix derivative[.]” (PX-678.) The minutes also labeled 2'-methyl compounds as the “Idenix compound” and “Idenix sugar,” that is until Dr. Schinazi directed his staff to “AVOID using the word Idenix sugar”; the terms were then scrubbed out. (Tr. 615:19-620:24, 621:16-624:24.) This evidence showed a culture of “piracy” at Pharmasset. (Tr. 969:3-971:13.) Dr. Schinazi also testified as to his familiarity with, and apparent appreciation for, “scooping” information from others; as he put it, “[i]t’s so easy to build on someone else’s knowledge.” (Tr. 564:15-565:7.)

Pharmasset’s Dr. Lieven Stuyver, who worked on 2'-methyl up nucleosides (as well as nucleosides having fluorine at the 2'-down position), raised serious concerns about encroaching on Idenix’s invention. (Tr. 661:7-662:3.) When he learned about Idenix’s patent application prior to its publication, he was so discouraged that he asked himself, “[w]hat am I doing here?,”

and he felt he needed to take a “cold shower.” (Tr. 651:14-653:17, 668:9-669:18.) He elevated the issue to Dr. Schinazi, reporting that “almost NOTHING is left of our inventions and list of compounds,” Idenix “will have all the priority dates,” and all of Pharmasset’s efforts were “redundant.” (Tr. 599:2-5, 601:19-24; 654:16-20 (“everything” that Pharmasset had been working on up to October 2001 “was covered already in Idenix’s applications”.) Dr. Stuyver advised that Pharmasset needed to take a license from Idenix and that there was no more for Pharmasset to do, even if it had independently developed 2'-methyl compounds for treating HCV. (Tr. 600:7-601:24, 669:3-18.) In response, Dr. Schinazi provided no consolation. Instead of denying that Idenix had the invention first, Dr. Schinazi counseled Dr. Stuyver to “relax”; Dr. Schinazi had “already worked out a plan.... Sleep well. Be happy!” (PX-470 at 0001-2.) Dr. Stuyver saw Dr. Schinazi’s ploy for what it was, replying: “I am not relaxed, and did not sleep well, and I am not happy.” (*Id.* at 0001.)

This evidence of misconduct was not mere testimony, so Gilead cannot claim ignorance. Emails, laboratory notebooks, meeting minutes, and other Pharmasset materials document the misconduct. All of that material was available to Gilead for its “historic” acquisition of Pharmasset. (Tr. 721:6-7.) Plus, Gilead knew Dr. Schinazi’s untrustworthy reputation, which was widespread. (Tr. 1016:8-21.) Dr. Michael Sofia even noted that he “would not have joined Pharmasset if Dr. Schinazi was part of the company” at that time, given his “reputation that preceded him of an individual that was not trustworthy.” (Tr. 1153:16-21.) Yet, Dr. Schinazi remained a central figure through Gilead’s acquisition of Pharmasset, from which he earned \$400 million. (Tr. 634:12-635:8.) Even today, Dr. Schinazi is still affiliated with Gilead. He holds Gilead stock, and he has been a consultant to *Gilead* throughout this case; his agreement provides compensation at \$800 per hour. (Tr. 561:19-562:20, 635:9-17.) (By contrast, Gilead

compensated its experts at \$550, \$600, and \$750 per hour. (Tr. 1517:21-1518:2; Secrist 5/25/16 Dep. 94:7-16 (Exh. 1); Tr. 1777:17-22.)) And although various Gilead witnesses attempted to distance themselves from him at trial, Gilead admitted that it did not have any information different than what Dr. Schinazi admitted. (Tr. 715:20-24.) Dr. Michael Otto also continued at Gilead—he was an officer at Pharmasset through Gilead’s acquisition, and he served as Gilead’s corporate representative in this case. (Tr. 1046:21-1047:8.) Nonetheless, Gilead never offered into evidence any legal advice on the Idenix patent obtained prior to Gilead’s acquisition of Pharmasset, or at any time thereafter. Gilead also never offered into evidence a legal opinion on Idenix’s patent application either. But all the while knowing about the Idenix application and patent—including four years after the patent issued—Pharmasset and Gilead continued to pursue sofosbuvir, conducted clinical trials, and ultimately launched the drug. The Court may consider all of this conduct, even though some occurred before the patent issued or infringement began.¹

This record does not demonstrate conventional infringement. Gilead built its success on a pervasive course of gross misconduct. Pharmasset knew about Idenix’s invention as early as 2000 and knew about Idenix’s patent application before it was made public; and Gilead and Pharmasset knew about the ’597 patent once it issued. Indeed, their knowledge of Idenix’s invention was across the board—from Pharmasset’s founder (Dr. Schinazi), to its top executives

¹ See *Stryker Corp. v. Davol Inc.*, 234 F.3d 1252, 1259 (Fed. Cir. 2000) (rejecting argument that copying of the patented product occurred before issuance of the patent); *Amsted Indus. v. Buckeye Steel Castings Co.*, 24 F.3d 178, 182, 186-87 (Fed. Cir. 1994) (notice and damages began in 1989 but facts giving rise to willfulness occurred in 1976 and 1982); *Pac. Furniture Mfg. v. Preview Furniture Corp.*, 800 F.2d 1111, 1114 n.9 (Fed. Cir. 1986) (“The fact that Preview may have started its infringement before the patents issued (or before appellants were aware of the patents) does not bar an award of increased damages or attorney fees.”); *Dominion Res., Inc. v. Alstom Grid, Inc.*, No. 15-224, 2016 WL 5674713, at *20 (E.D. Pa. Oct. 3, 2016) (rejecting argument that the court could not consider pre-infringement conduct: “Alstom asks us to ignore...the seventeen month history [prior to infringement]...and focus on [the date infringement began] with blinders on. We cannot do so.”); D.I. 490 at ¶ 4.

(Drs. Otto, Stuyver, and Watanabe), to its chemists (Mr. Clark and Dr. Sofia), and to Gilead when it purchased Pharmasset with clear knowledge of Idenix’s patent, Dr. Schinazi’s reputation, and the history of sofosbuvir’s development. (Tr. 560:14-25, 590:21-591:7, 652:22-653:2, 653:18-654:1, 696:11-697:1, 712:18-713:9, 1055:13-16, 1136:19-1138:7, 1140:14-1141:25.) Yet Pharmasset and Gilead did not respect Idenix’s patent rights; they took Idenix’s invention for their own gain. The result of this misconduct: Gilead was the first to market anti-HCV treatments using 2'-methyl nucleosides, and its two drugs have earned Gilead well over \$42 billion worldwide and over \$28 billion in the United States, for not even three years of sales. Gilead has acquired other intangible benefits as well at Idenix’s expense, such as name recognition and the monopoly from being first to market in this regulated industry.

Compensatory damages to Idenix are not sufficient to address this course of misconduct. Gilead should not be in the same position it would have been *ex ante*—a reasonable royalty for use of Idenix’s patent. As the jury was instructed, its damages were to compensate for Gilead’s infringement, not to address willfulness. (D.I. 516 at 25.) To honor and remedy the jury verdict, damages should be enhanced. *See Power Integrations*, 762 F. Supp. 2d at 722 (finding defendant not adequately punished by jury’s award, even assuming that the jury’s award accounted for all of defendant’s profit derived from the infringing sales).

B. The *Read* Factors Support Enhancement

Before and after *Halo*, the *Read* factors help inform a court’s discretion in deciding whether to enhance fees and by how much: (1) “whether the infringer deliberately copied the ideas or design of another”; (2) whether the infringer had a “good-faith belief” that the patent was invalid or not infringed; (3) “the infringer’s behavior as a party to the litigation”; (4) the infringer’s “size and financial condition”; (5) “[c]loseness of the case”; (6) “[d]uration” of the infringer’s “misconduct”; (7) “[r]emedial action” by the infringer; (8) the infringer’s “motivation

for harm"; and (9) whether the infringer "attempted to conceal its misconduct." *Read Corp. v. Portec, Inc.*, 970 F.2d 816, 827-28 (Fed. Cir. 1992). Review of materials outside the trial record is permitted. *See nCUBE Corp. v. SeaChange Int'l, Inc.*, 313 F. Supp. 2d 361, 388-89 (D. Del. 2004), *aff'd*, 436 F.3d 1317 (Fed. Cir. 2006). Where several factors are found, courts have exercised discretion to enhance. *See, e.g., TruePosition Inc. v. Andrew Corp.*, 611 F. Supp. 2d 400, 411-13 (D. Del. 2009) (enhancing where some factors heavily favored enhancement, some were neutral, and there was no evidence of direct copying), *aff'd*, 389 F. App'x 1000 (Fed. Cir. 2010); *nCUBE*, 313 F. Supp. 2d at 387-90 (enhancement where deliberate copying and several other factors favored enhancement). The *Read* factors further support enhancement here.

1. Gilead Deliberately Copied Idenix's Patent, Tried To Conceal Its Misconduct, And Took Advantage Of Its Malfeasance For Years Without Seeking A License

Idenix addresses several factors together. To begin, and as outlined above, Gilead/Pharmasset's deliberate copying and misuse of Idenix's invention presents a quintessential basis to enhance damages (**factor 1**). *See PPC Broadband, Inc. v. Corning Optical Commc'n's RF, LLC*, No. 5:11-cv-761 (GLS/DEP), 2016 WL 6537977, at *6 (N.D.N.Y. Nov. 3, 2016); *Arctic Cat Inc. v. Bombardier Recreational Prods., Inc.*, No. 14-cv-62369, 2016 WL 4249951, at *6 (S.D. Fla. July 27, 2016) (observing demonstration of plaintiff's prototype and subsequently developing a similar system showed copying); *TruePosition*, 611 F. Supp. 2d at 411-13. Deliberate copying has been found where the defendant failed to produce evidence of independent development of the invention and had access to the plaintiff's technology. *Imperium IP Holdings (Cayman), Ltd. v. Samsung Elecs. Co.*, No. 4:14-CV-371, 2016 WL 4480542, at *6 (E.D. Tex. Aug. 24, 2016). Those are the facts here. *See* Part I.A, *supra*.

This evidence also shows that Gilead/Pharmasset attempted to conceal its use of Idenix's invention during development of PSI-6130 (**factor 9**). *See Power Integrations*, 762 F. Supp. 2d

at 725 (defining this factor as “whether the accused infringer attempted to conceal its allegedly infringing activities, either through advertising and selling the products covertly or through concealing evidence of infringing conduct”). *See Part I.A, supra.*

As the evidence also shows, the misconduct was long lasting—dating back more than a decade, well before Gilead put its infringing products on the market (**factor 6**). The misconduct continued even when Idenix’s patent issued in 2009 and when Gilead purchased Pharmasset; indeed, Gilead continued to develop sofosbuvir and even retained Dr. Schinazi as a consultant. And after Idenix filed this lawsuit in 2013 and the Court issued its claim constructions rejecting all of Gilead’s proposals (twice), Gilead’s infringement continued. *Dominion*, where the duration of the misconduct favored enhancement, is on point. Like here, the misconduct in that case began even before infringement, because the infringer “had direct notice from [the patentee] and [the patentee’s] *outside counsel*...from the second month of the intense lengthy installation project” and the infringer “was on notice of possible infringement for almost the entire duration of the [18-24 month] project.” *Dominion*, 2016 WL 5674713 at *23 (emphasis in original).

Meanwhile, Gilead and Pharmasset never took remedial action (**factor 7**). Gilead should have and could have obtained a license from Idenix. Dr. Stuyver raised that need as early as Fall 2001, but he was ignored. (Tr. 600:23-601:16.) Even during this case, Gilead did not seek a royalty-bearing license to preempt the need for the jury’s award. *See Dominion*, 2016 WL 5674713 at *23 (awarding enhanced damages where infringer “did not take full remedial action after learning of possible infringement”); *Arctic Cat*, 2016 WL 4249951, at *8 (“BRP has never engaged in remedial action either...such as approaching Arctic Cat about a license....”).

Finally, the motivation underlying the misconduct further supports enhancement (**factor 8**). Pharmasset and Idenix, and Gilead and Merck, are competitors in the same, narrow space for

developing HCV treatments. Initially though, Idenix and Pharmasset were pursuing different paths—through 2001, Pharmasset was working on other drugs, not 2'-methyl compounds. *See* Part I.A, *supra*. But after Pharmasset wrongfully obtained and used Idenix's confidential information, the two companies were in direct competition. (Tr. 479:10-15, 722:24-723:22, 1069:11-15.) Such conduct by a direct competitor “specifically intended to take business away from the patent owner” favors enhancement. *Power Integrations*, 762 F. Supp. 2d at 724; *Dominion*, 2016 WL 5674713 at *23 (finding that motivation “weighs in favor of enhanced damages because [defendant’s] motivation to harm came from its touted desire for a competitive advantage over [patentee]...the only other competitor”).

2. Gilead Acted Without A Good-Faith Belief Of Non-Infringement Or Invalidity

Gilead has no evidence that it had a good-faith belief that it would not be liable for infringement (**factor 2**). Fatal to Gilead is that it has never identified a single person at the company who purportedly held a good-faith belief of non-infringement or invalidity. Further, with respect to infringement, Gilead never really disputed infringement and, in any event, waived a good-faith belief of non-infringement. (D.I. 367; D.I. 368 at 136:12-138:1.) As for its invalidity defenses, although Gilead claimed a good-faith belief of invalidity, Gilead relied on litigation defenses, never identifying anyone at the company who purportedly held such a belief.

Also, despite the express concerns articulated about the Idenix patent (*see* PX-470) and the “patent complications” it posed (*see* PX-471), Gilead never offered into evidence a legal opinion on the '597 patent, from either before or after the patent’s issuance (even though both Pharmasset and Gilead regularly used patent attorneys for other tasks). Instead, they continued the development of sofosbuvir through the issuance of the patent and for four years thereafter, until launching in 2013. *See PPC Broadband*, 2016 WL 6537977, at *7 (finding this factor

favored enhancement where defendant did not obtain legal advice before launching its infringing products, and although defendant spoke with counsel after the suit was filed, it “failed to provide a formal opinion regarding noninfringement”); *Imperium*, 2016 WL 4480542, at *6 (despite knowledge of the patents, “[d]efendants never undertook any serious investigation to form a good-faith belief as to non-infringement or invalidity”). Rather, Gilead’s § 112 defenses were a product of this lawsuit as proffered by its retained experts and counsel, created “years after [the infringer] began engaging in culpable conduct”; they are insufficient to insulate Gilead “from liability for enhanced damages.” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1340 (Fed. Cir. 2016). “Proof of an objectively reasonable litigation-inspired defense to infringement is no longer a defense to willful infringement,” and thus no basis to avoid enhancement. *Id.* at 1341.

In fact, evidence affirmatively shows that Gilead did not have a good-faith belief of invalidity. With respect to Gilead’s § 112 defenses, contemporaneous real-world evidence from Pharmasset’s own scientists in the field show that Pharmasset readily appreciated Idenix’s invention from the patent disclosure and how to make it. For example, Pharmasset recognized the adequacy of Idenix’s asserted patent disclosure in sworn grant applications to the U.S. government in 2003. (PX-764; PX-851; Tr. 633:1-634:11 (grant applications crediting the Idenix patent specification with disclosing a class of 2'-methyl compounds with potent activity against HCV).) As for Gilead’s §§ 102/103 defenses, Gilead’s claimed justification for introducing these into the case late is that it did not have enough information beforehand to assert the defenses. (D.I. 427 at 2 (“That [April 2016] deposition finally allowed Gilead some deposition discovery to develop its [Merck] invalidity defense.”).) *A fortiori*, Gilead could not have had a good-faith belief of anticipation or obviousness to avoid enhanced damages.

3. Gilead’s Litigation Conduct Supports Enhancement

Gilead’s conduct in this case favors enhancement (**factor #3**). At various junctures,

Gilead took unreasonable positions. For instance, after both of the Court’s claim construction orders, Gilead did not have a non-infringement case, but each time it continued to hold Idenix to its task of proving infringement, taking that position for almost a year—until just before trial. Lack of reasonableness as a case proceeds supports enhancement. *See Dominion*, 2016 WL 5674713, at *22 n.203.

Particularly in the final stages of the case, Gilead took baseless positions. On the eve of trial, Gilead raised a bifurcation request, even though it had represented the opposite throughout the entire course of this case. (D.I. 457.) As justification for its belated request, Gilead argued that it was a result of conceding infringement, a decision Gilead claimed it reached only after receiving the Court’s second claim construction order. That representation proved to be untrue; Gilead notified Idenix that it would concede infringement *prior* to receiving that order, a point that Idenix made in opposing bifurcation. (D.I. 469.) The Court questioned Gilead’s alleged justification at oral argument, and Gilead did not dispute the misrepresentation. (D.I. 477.) While the Court denied that bifurcation request (*id.* at 25:1-24; D.I. 495), the manner in which it was presented (including the alleged justification for it), the distraction to Idenix so close to trial, and the expense and effort required of Idenix to address Gilead’s request on short notice, should not be overlooked.

At trial, Gilead also went outside the bounds of zealous advocacy. After fact discovery closed, Gilead had belatedly injected, and then repeatedly attempted to refashion, baseless §§ 102/103 defenses. These defenses took the opposite position from what Gilead pressed in the California case; by injecting them late, Gilead could tactically avoid simultaneously crediting Merck’s work/patent here while challenging it in California. At trial, the problems with Gilead’s Merck work defenses multiplied, but Gilead did not let up. Gilead was forced to concede that it

had no individual at Merck to whom it could ascribe a prior invention—a fundamental requirement for invention—but Gilead nonetheless continued to seek ambiguous and unfounded jury instructions that “Merck” was a prior inventor. (Tr. 1885:2-14.)

The culmination was when Gilead morphed its Merck work defenses yet again—dropping its defenses based on the Merck patent it had been asserting and switching to a different Merck patent. Gilead did so only *after* closing its case-in-chief, depriving Idenix of the opportunity to examine Gilead’s witnesses. (D.I. 515.) The Court noted, “I have significant concerns...I am concerned about the prejudice [to Idenix].” (Tr. 2051:14-2052:4.) Yet Gilead insisted there was no “unfair surprise” or “prejudice” to Idenix. (Tr. 2049:19-2050:4.)

This conduct was not part of a hard-fought defense. It was needless, inappropriate, and egregious. It too supports enhancement.

4. Gilead Is A Multi-Billion-Dollar Company With Large Cash Reserves Due In Large Part To The Enormous Profits Of Its Infringing Products

Gilead’s size and financial condition also favor enhancement (**factor #4**). “[E]nhanced damages are intended to be punitive” unless doing so “would severely impair the defendant’s ability to function.” *Power Integrations*, 762 F. Supp. 2d at 722 (citing Chisum on Patents § 20.03[4][b][vi] (1990)). Gilead is a multi-billion dollar company, with over \$32 billion on hand in cash. (Exh. 2 at ¶ 52.) Further, Gilead’s gross profit margin from the accused products (from which it has obtained tens of billions of dollars) is as high as it can get—about 99%. (Tr. 724:14-725:7, 1325:13-14.) As Gilead’s corporate representative admitted, Gilead set the sales price for Sovaldi® and Harvoni® “to make money and maximize its profits.” (Tr. 1331:16-22.) Gilead is flush with cash and is not at any risk of being impaired to function.

The amount awarded by the jury, while substantial, is insignificant to Gilead’s bottom line. Certainly, Gilead’s size and condition provide no basis to decline enhancement of the

jury's award. *See Power Integrations*, 762 F. Supp. 2d at 722 ("The defendant's financial condition typically is used as a reason **not** to grant enhanced damages to the fullest extent.") (bold emphasis added); *nCUBE*, 313 F. Supp. 2d at 390 (finding this factor "weighs in favor of enhancing damages" where infringer held over \$92 million in cash, had total assets over \$150 million, and generated over \$31 million in two quarters based on the infringing product); *Johns Hopkins Univ. v. CellPro*, 978 F. Supp. 184, 195 (D. Del. 1997) ("Punishing a larger company in a stronger financial condition may call for higher damages, where a lower number may be equally effective in punishing a smaller company."). As one court has aptly put it, enhancement is "particularly warranted" where the infringer "is a multi-billion dollar enterprise and the market leader—due in significant part to sales of products found to willfully infringe." *Arctic Cat*, 2016 WL 4249951, at *7.

5. The Case Was Not Close

The across-the-board result for Idenix also favors enhancement (**factor #5**). Gilead conceded infringement prior to trial, and after nearly a two-week trial, the eight-member jury unanimously found on all issues in favor of Idenix. Indeed, the strong evidence of willfulness was essentially unrebutted. *See* Part I.A, *supra*. Also, Gilead moved for summary judgment of no willful infringement, and the Court denied the motion. "A strong case of willful infringement suggests the court should impose more substantial damages." *Johns Hopkins*, 978 F. Supp. at 196. And with respect to damages, the jury not only adopted Idenix's damages scenario using a running royalty as opposed to a lump sum as Gilead's expert opined, but it awarded the full amount sought by Idenix for compensatory damages.

Further, infringement was never really disputed, even though Gilead conceded it only on the eve of trial. (E.g., D.I. 361 (7/21/16 Joint Letter) at 3 & n.2 (Gilead taking the position that the "central issue" was whether the patents were valid, not whether Gilead infringed).) Gilead

never even submitted a non-infringement report, whether before or after the claims were construed. Indeed, documentary evidence showed that, as far back as Dr. Schinazi and Dr. Stuyver, Gilead knew that the '597 patent covered sofosbuvir. And although Gilead proposed claim constructions to purportedly oppose infringement, the Court rejected all of Gilead's proposals, both for the original set of disputed terms and again in its supplemental construction of additional terms. Where, as here, there is "literal infringement on each of the asserted claims," the case is not close. *See nCUBE*, 313 F. Supp. 2d at 390.

The jury also rejected all of Gilead's various invalidity defenses for all asserted claims—ranging from § 112 defenses to §§ 102/103 defenses that Gilead added to the case. Gilead twice moved for summary judgment on its § 112 defenses to no avail, and their lack of merit was confirmed at trial. Gilead's written description defense was based on an alleged lack of antiviral data. But as Gilead's own Dr. Christoph Seeger effectively conceded, one skilled in the art would have known that the substantial data disclosed in the '597 patent would never have been obtained without first confirming antiviral activity. (Tr. 1513:20-1517:20.) Idenix, on the other hand, proved that Pharmasset's own scientists recognized that Idenix was in possession of its invention (PX-470; Tr. 1694:13-1697:7 (Dr. John Secrist admitting on cross-examination that Drs. Schinazi and Stuyver were skilled artisans)) and that third parties contemporaneously recognized the same (PX-664). Also, Mr. Clark's ability to readily synthesize 2'-methyl compounds, even though he did not meet either Dr. Seeger's or Dr. Secrist's definition of one skilled in the art, belied Gilead's contention that the claims were not enabling. (Tr. 960:9-21, 1440:9-1441:5, 1582:6-11, 1731:20-1733:18.)

As for Gilead's §§ 102/103 defenses, they were ill-conceived, to say the least. That, too, was made clear at trial. Gilead's Merck work defenses were not only questioned by the Court

(Tr. 1883:15-20 (“The more I look through the different proposals [regarding the Merck work defense], the less I’m afraid I understand what Gilead is arguing...”)), but they lacked evidentiary support. When Dr. David Olsen was asked whether his group at Merck “ever discover[ed] a 2'-methyl up nucleoside for treating hepatitis C prior to the fall of 2000,” he answered: “No.” (Tr. 1392:22-25.) Gilead’s expert, Dr. Seeger, confirmed that Gilead had no documents or evidence of Merck testing between 1998 and 2000 on 2'-methyl “up” nucleosides for HCV. (Tr. 1464:13-1465:22.) Dr. Seeger also admitted that he had no information from Merck that anyone at Merck appreciated, prior to the fall of 2000, that its L-765 compound could be used to treat HCV. (Tr. 1478:7-18.) Gilead even failed to pursue certain defenses entirely, seeking to assert a different Merck patent after closing its case-in-chief. *See* Part I.B.3, *supra*. In addition, Idenix’s substantial diligence proofs from 2000-2001 went wholly unrebutted by Gilead. On this record, the closeness-of-the-case factor favors enhancement.

In light of *Halo* and *Read*, the jury’s compensatory damages award should be enhanced.

II. THE COURT SHOULD AWARD A HIGHER ONGOING ROYALTY

Gilead continues to sell the infringing product, with no plans of stopping. Ongoing royalties are needed to compensate Idenix for Gilead’s continued willful infringement. *Paice LLC v. Toyota Motor Corp.*, 504 F.3d 1293, 1314 (Fed. Cir. 2007) (future royalties “prevent the violation of any right secured by patent, on such terms as the court deems reasonable”). To determine an appropriate ongoing royalty, courts consider: (1) changes in the parties’ bargaining positions; (2) the *Georgia-Pacific* factors, using the date of judgment as the date of the new hypothetical negotiation; and (3) the fact that any continued sales of the relevant products is necessarily willful. Each of these factors supports an ongoing royalty rate of at least 14%. The base should be determined in the same manner used by Idenix’s expert and adopted by the jury.

A. Changes In Bargaining Positions Support A Higher Ongoing Royalty Rate

As the Federal Circuit has explained, “[t]here is a fundamental difference...between a reasonable royalty for pre-verdict infringement and damages for post-verdict infringement.” *Amado v. Microsoft Corp.*, 517 F.3d 1353, 1361 (Fed. Cir. 2008). “Prior to judgment, liability for infringement, as well as the validity of the patent, is uncertain, and damages are determined in the context of that uncertainty. Once a judgment of validity and infringement has been entered, however, the calculus is markedly different....” *Id.* at 1362. There is “a substantial shift in the bargaining position” in favor of the patentee. *ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312, 1342 (Fed. Cir. 2012). Thus, it is not surprising that of the dozens of cases Idenix has uncovered addressing ongoing royalty rates, most adjusted the rate upward from the rate found at trial. *See, e.g., Telcordia Techs., Inc. v. Cisco Sys., Inc.*, No. 04-876-GMS, 2014 WL 1457797, at *4 (D. Del. Apr. 14, 2014) (“[C]ourts frequently impose a post-verdict ongoing royalty rate that is higher than the reasonable royalty found at trial for past infringement.”). Only one set a lower rate, due to peculiar circumstances not present here. *See XY, LLC v. Trans Ova Genetics, LC*, No. 13-cv-0876, 2016 WL 1391615, at *10-12 (D. Colo. Apr. 8, 2016). This practice of adjusting the jury’s rate upward (in recognition of the changed bargaining positions) has been used in this District and approved by the Federal Circuit.²

Following this well-established law, the changes in bargaining position here—from the date of a hypothetical negotiation at the time infringement began to the date of judgment—

² *See, e.g., Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., Inc.*, 670 F.3d 1171, 1193 (Fed. Cir. 2012) (jury rate of 10%; ongoing rate of 12.5-20%), *aff’d in relevant part*, 682 F.3d 1003, 1005 n.1 (Fed. Cir. 2012); *DePuy Synthes Prods., LLC v. Globus Med., Inc.*, No. 11-652-LPS, 2014 U.S. Dist. LEXIS 61450, at *24-25 (D. Del. Mar. 25, 2014) (jury rate of 15%; ongoing rate of 18%); *Boston Sci. Corp. v. Cordis Corp.*, 838 F. Supp. 2d 259, 275-76 (D. Del. 2012) (jury rate of 2.95%; ongoing rate of 32%); *Telcordia*, 2014 WL 1457797 at *2, 5 (jury rate of 0.64%; ongoing rate of 1.25%).

support an ongoing royalty higher than what the jury determined. In *DePuy*, “the post-verdict changes to the parties’ hypothetical bargaining positions” *alone* justified an increase to the jury’s royalty rate by three points (from 15% to 18%). *DePuy*, 2014 U.S. Dist. LEXIS 61450, at *24 n.8. As set forth below, additional factors support an even higher adjustment.

B. The *Georgia-Pacific* Factors Support A Higher Ongoing Royalty Rate

The *Georgia-Pacific* factors supporting the jury’s reasonable royalty now support an ongoing royalty that is higher than what the jury awarded. (Exh. 2 at ¶¶ 23-42.)

Georgia-Pacific factor 5 (the commercial relationship between the licensor and licensee, such as, whether they are competitors in the same territory in the same line of business) supports an upward adjustment to the jury’s 10% rate. At the time of the hypothetical negotiation in 2013, Idenix did not have a product on the market that competed with Gilead’s Sovaldi® and Harvoni®, and Idenix was not affiliated with any other companies. But as of January 2017, Idenix had become a subsidiary of Merck, which was selling (and continues to sell) Zepatier®, a product that directly competes with Sovaldi® and Harvoni®. (*Id.* at ¶¶ 30-36.) Thus, granting a license to Gilead would result in immediate lost sales and/or market share of Merck’s competing product. (*Id.* at ¶ 30.) This factor supports a royalty rate substantially higher than 10%. Indeed, the rate proposed by Idenix is conservative as it would not come close to recouping the potential losses to Merck’s product.

Georgia-Pacific factors 2, 7, and 12 also support an ongoing royalty rate higher than 10%. Idenix’s change in ownership strengthens the relevance of the Merck-Roche License [REDACTED] [REDACTED] and the shorter duration of the ’597 patent term as of January 2017 compared to the 2013 negotiation also favors a higher royalty rate. (*Id.* at ¶ 38.) As explained by Idenix’s damages expert Andrew Carter, together the *Georgia-Pacific* factors most conservatively support an ongoing royalty of at least 12%, not accounting for other non-*Georgia-Pacific* factors that

support a further increase. (*Id.* at ¶ 42.)

C. Gilead's Post-Judgment Willfulness Supports A Higher Ongoing Royalty Rate

There can be no real dispute that Gilead's post-judgment infringement is willful. *Affinity Labs of Tex., LLC v. BMW N. Am., LLC*, 783 F. Supp. 2d 891, 897-99 (E.D. Tex. 2011) (“Following a jury verdict and entry of judgment of infringement and no invalidity, a defendant's continued infringement will be willful absent very unusual circumstances.”). Post-judgment willful infringement weighs heavily in favor of a further increase to the ongoing royalty rate. *See id.* at 905 (defendant conceding that an increase was warranted; court increased ongoing royalty by 33% to “adequately account for the willful nature of the ongoing infringement”); *Mondis Tech. Ltd. v. Chimei InnoLux Corp.*, 822 F. Supp. 2d 639, 653 (E.D. Tex. 2011) (doubling jury's royalty rate “to account for enhancement due to willfulness”); *I/P Engine, Inc. v. AOL Inc.*, No. 2:11CV512, 2014 WL 309245, at *4 (E.D. Va. Jan. 28, 2014) (further increasing ongoing royalty rate by 40% to account for post-judgment infringement); *Arctic Cat*, 2016 WL 4249951, at *3-8 (doubling the jury's royalty rate due in large part to the fact that ongoing infringement is willful); *Telcordia*, 2014 WL 1457797, at *5 (finding increased ongoing royalty rate reflects a “premium for … continued willful infringement”).

The considerations that govern the award of enhanced damages for a willfulness finding are informative and support further increasing ongoing royalties to reflect the willful nature of post-judgment infringement. *See Affinity*, 783 F. Supp. 2d at 905; *I/P Engine*, 2014 WL 309245, at *4 (relying on “the treble damages normally awarded for willful infringement” to further increase the ongoing royalty by 40%). Like enhanced damages, “[t]he purpose of an ongoing royalty is to reduce the incentive to infringe.” *Arctic Cat Inc. v. Bombardier Recreational Prods., Inc.*, No. 14-cv-62369, 2017 U.S. Dist. LEXIS 1607, at *8 (S.D. Fla. Jan. 3, 2017) (citing *Affinity*, 783 F. Supp. 2d at 901 (ongoing royalty is to “reduce[] the defendant's profit motive to

infringe and serves to deter infringing conduct in general’’)). Here, an increased royalty on products that have incredibly high profit margins is appropriate to satisfy that goal.

To account for post-judgment willful infringement, courts commonly conduct a *Read* factor analysis. *I/P Engine*, 2014 WL 309245, at *4 (“the relevant factors delineated in *Read*[] ... weigh in favor” of a higher ongoing royalty rate); *Affinity*, 783 F. Supp. 2d at 901-02; *Arctic Cat*, 2016 WL 4249951, at *6; *Mondis*, 822 F. Supp. 2d at 646. A *Read* factor analysis supports increasing the ongoing royalty for precisely the same reasons set forth above with respect to enhanced damages for past willful infringement. *See* Part I.B, *supra*. Indeed, the analysis here should be undisputed. For example, *Read* factors 2 and 5 (whether defendant had a good-faith belief of invalidity or non-infringement and closeness of the case) weigh heavily in favor of enhancement of post-judgment damages. Gilead has been adjudged a willful infringer, and the ’597 patent found not invalid. Thus, Gilead cannot have any good-faith belief of invalidity or non-infringement, nor can this now be considered a close case. *Mondis*, 822 F. Supp. 2d at 653 (“given the judgment of infringement and invalidity, the Court holds that InnoLux does not have a good-faith belief of invalidity or non-infringement and that the case is not close”).³

* * *

In view of the foregoing, increasing the ongoing royalty rate to at least 14% is appropriate. Indeed, it is conservative under the circumstances considering: (1) Idenix’s increased bargaining position; (2) Idenix’s affiliation with Merck, who would be agreeing to take a hit to its product by granting Gilead a license to sell competing infringing products, which would not have been the case at the time the jury calculated a reasonable royalty of 10% given

³ Finally, it is no answer that Gilead purportedly believes that its defenses will prevail on appeal. “[B]ecause the ongoing royalty rate can be appealed together with the findings of infringement and no invalidity,” it is improper to “discount the royalty rate based on the possible outcome of an appeal.” *Mondis*, 822 F. Supp. 2d at 649.

Idenix had no competing product on the market; (3) Gilead's ongoing infringement is willful; and (4) Gilead will still be left with enormous profits going forward. Any one of these factors alone supports a meaningful increase; together, they warrant at least 14%.

D. The Court Should Award Royalties For Gilead's Sales Of Epclusa®

On June 28, 2016 (after the close of fact and initial expert discovery), Gilead began selling Epclusa®, another sofosbuvir containing-drug. When Idenix became aware through public sources about the launch of this product and its sofosbuvir content, Idenix requested that Gilead comply with its duty to supplement discovery by providing relevant information regarding Epclusa®. (Exh. 3.) Gilead refused, based on its view that it was too late to include Epclusa® in the case. (Exh. 4.) After trial, the parties agreed that, rather than burden the Court with a new case on Epclusa®, they would address the infringing Epclusa® sales through the ongoing royalty analysis. Thus, consistent with the jury's finding and the discussion above, Idenix proposes a 10% royalty for Epclusa® during the period of June 28, 2016, through January 26, 2017, and 14% for sales thereafter. For the prejudgment period, the 10% royalty rate should be enhanced for the reasons set forth above. Indeed, the enhancement for Epclusa® is especially appropriate given that it was launched well after this Court's claim construction, which was decidedly in Idenix's favor, eliminating any good-faith non-infringement defense.

With respect to the royalty base for Epclusa®, it should be calculated in a manner similar to Gilead's infringing Harvoni® product, resulting in a 9% total reduction to its total U.S. sales. Like Harvoni®, Epclusa® is a combination drug that includes velpatasvir in addition to sofosbuvir (which is the infringing compound). As with Harvoni®, Gilead's marketing materials for Epclusa® describe sofosbuvir as being the "backbone" for the treatment. (Exh. 2 at ¶ 45.) Thus, calculating the royalty base for Epclusa® should follow the same model that Idenix's expert Mr. Carter used and the jury followed for Harvoni®. In particular, a 5% deduction should

be applied to account for gross-to-net deductions (as Mr. Carter did with Sovaldi® and Harvoni®). (*Id.* at ¶ 44.) In addition, one can isolate the value of sofosbuvir in Epclusa® by comparing the discounted price for Sovaldi® (*i.e.*, sofosbuvir) to the discounted price for Epclusa® (which is higher than that for Sovaldi®). This results in an additional reduction of 4% to Epclusa® sales, which removes the value of the non-infringing compound from the Epclusa® royalty base in a similar manner to what was done for Harvoni®. (*Id.* at ¶¶ 47-51.) The 9% total reduction should be used to calculate the royalty base for pre- and post-January 26, 2017 sales.

III. THE COURT SHOULD EXERCISE ITS DISCRETION TO AWARD FEES

Under 35 U.S.C. § 285, “[t]he court in exceptional cases may award reasonable attorney fees to the prevailing party.” An “exceptional” case is “simply one that stands out from others with respect to the substantive strength of a party’s litigating position (considering both the governing law and the facts of the case) or the unreasonable manner in which the case was litigated.” *Octane Fitness*, 134 S. Ct. at 1756. Idenix bears the burden of proving its fee request by a preponderance of the evidence. *Id.* at 1758.

The same exceptional circumstances that support enhanced damages support attorneys’ fees. *See Power Integrations*, 762 F. Supp. 2d at 720 (To determine whether a case is exceptional, “courts undertake an analysis similar to” enhanced damages.). As the evidence of willfulness and the *Read* factors show, *see* Part I, *supra*, Gilead’s infringement has been “exceptional”—*i.e.*, “uncommon,” “rare,” or “not ordinary.” *Octane Fitness*, 134 S. Ct. at 1756. Moreover, Gilead’s misconduct particularly in the last stretch of this case distinguishes the case from typical infringement. *See* Part I.B.3, *supra*. At minimum, attorneys’ fees relating to at least those portions of the case are warranted.

IV. PREJUDGMENT INTEREST SHOULD USE THE PRIME RATE

“As a general matter, prejudgment interest should ordinarily be awarded in patent cases

to provide patent owners with complete compensation.” *LG Display Co. v. AU Optronics Corp.*, 722 F. Supp. 2d 466, 475 (D. Del. 2010). The Court has broad discretion to select the prejudgment interest rate to be applied. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 939 F.2d 1540, 1545 (Fed. Cir. 1991). By far, the most common practice in this District is to use the prime rate, compounded quarterly.⁴ The Federal Circuit has also approved the prime rate, even if there is no evidence that the patent holder borrowed at the prime rate. *Id.* In addition, it is common and reasonable to apply the prime rate using the mid-period convention, which assumes that the royalty payments are earned equally through the quarter, as opposed to the beginning or end of the quarter. *W.R. Grace & Co.—Conn. v. Intercat, Inc.*, 60 F. Supp. 2d 316, 332 (D. Del. 1999) (applying mid-term convention). Consistent with this authority, the prime rate, which ranged from 3.25%-3.75% during the relevant period, should be used.

Indeed, using the prime rate is conservative in light of Merck’s (Idenix’s parent) prior practice. Merck had long-term debt during the time in which royalties were accruing, with many billions being borrowed at interest rates higher than the applicable prime rates here. (Exh. 2 at

⁴ *Comcast IP Holdings I, LLC v. Sprint Commc’ns Co.*, No. 12-cv-0205-RGA, 2015 WL 4730899, at *10 (D. Del. Aug. 10, 2015); *Ateliers de la Haute-Garonne v. Broetje Automation-USA Inc.*, 85 F. Supp. 3d 768, 783 (D. Del. 2015); *Dow Chem. Co. v. Nova Chem. Corp.*, No. 05-737-LPS, 2014 WL 1285508, at *11 (D. Del. Mar. 28, 2014); *DePuy*, 2014 U.S. Dist. LEXIS 61450, at *27-28; *XpertUniverse, Inc. v. Cisco Sys., Inc.*, No. 09-157-RGA, 2013 WL 6118447, at *11 (D. Del. Nov. 20, 2013); *LG Elecs. U.S.A., Inc. v. Whirlpool Corp.*, 798 F. Supp. 2d 541, 561-62 (D. Del. 2011); *Edwards Lifesciences AG v. CoreValve, Inc.*, No. 08-91-GMS, 2011 WL 446203, at *13 (D. Del. Feb. 7, 2011); *Energy Transp. Grp., Inc. v. Sonic Innovations, Inc.*, No. 05-422 (GMS), 2011 WL 2222066, at *22 (D. Del. June 7, 2011); *LG Display*, 722 F. Supp. 2d at 475; *Telcordia Techs, Inc. v. Cisco Sys, Inc.*, 592 F. Supp. 2d 727, 749 (D. Del. 2009); *St. Clair Intellectual Prop. Consultants, Inc. v. Fuji Photo Film Co.*, 674 F. Supp. 2d 555, 561 (D. Del. 2009); *Finjan Software, Ltd. v. Secure Computing Corp.*, No. 06-369 (GMS), 2009 WL 2524495, at *14 (D. Del. Aug. 18, 2009); *Siemens Med. Sols. USA, Inc. v. Saint-Gobain Ceramics & Plastics, Inc.*, 615 F. Supp. 2d 304, 319 (D. Del. 2009); *TruePosition*, 611 F. Supp. 2d at 414; *Becton Dickinson & Co. v. Tyco Healthcare Grp. LP*, No. 02-1694 GMS, 2008 WL 4745882, at *3 (D. Del. Oct. 29, 2008); *Cordis Corp. v. Medtronic Vascular, Inc.*, 576 F. Supp. 2d 645, 652 (D. Del. 2008); *TruePosition Inc. v. Andrew Corp.*, 568 F. Supp. 2d 500, 534 (D. Del. 2008); *IMX, Inc. v. LendingTree, LLC*, 469 F. Supp. 2d 203, 228 (D. Del. 2007); *Tristrata Tech., Inc. v. Mary Kay, Inc.*, 423 F. Supp. 2d 456, 472 (D. Del. 2006).

¶¶ 17-18.) For example, in November 2014, Merck redeemed \$1.0 billion 4.00% notes that were due in 2015 and \$1.0 billion 6.00% notes that were due in 2017. (*Id.* at ¶ 18.) In February 2015, Merck issued \$2.0 billion aggregate principal amount of 3.70% notes due in 2045. (*Id.*) Further, with only one exception, the relevant Merck debt notes are redeemable in whole or in part, at Merck’s option at any time, at varying redemption prices. (*Id.* at ¶ 17.) For the foregoing reasons, the prime rate compounded quarterly is appropriate to calculate prejudgment interest here.

Idenix sought to reach agreement on this issue, but Gilead has maintained that prejudgment interest should be calculated using the T-bill rate. Gilead ignores the overwhelming precedent in this District rejecting the T-bill rate in favor of the prime rate. *E.g., DePuy*, 2014 U.S. Dist. LEXIS 61450, at *27 (as opposed to the T-bill rate, the prime rate “generally reflects the borrowing costs of large businesses and thus is a good estimate of the cost...of not having access to the damages award during the infringement”); *Fisher-Price, Inc. v. Safety 1st, Inc.*, No. 01-051 GMS, 2008 WL 1976624, at *7 (D. Del. May 5, 2008) (as opposed to the T-bill rate, the prime rate “better reflects the time value of money Fisher-Price lost due to Safety 1st’s infringement”). Consistent with this precedent, the prime rate, not T-bill rate, should be used.

V. THE PARTIES AGREE THAT SUPPLEMENTAL DAMAGES THROUGH JUDGMENT AND POST-JUDGMENT INTEREST ARE APPROPRIATE

Plaintiffs are entitled to be compensated for Gilead’s infringing sales of Sovaldi® and Harvoni® from August 2016 (the latest data available to the jury) through the date of judgment. *See* 35 U.S.C. § 284. Post-judgment interest is also required. *See* 28 U.S.C. § 1961(a), (b). The parties do not dispute these issues or amounts and will submit a stipulation as to their agreement.

CONCLUSION

For the reasons stated, Plaintiffs are entitled to the requested relief.

ASHBY & GEDDES

/s/ John G. Day

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Attorneys for Plaintiffs
Idenix Pharmaceuticals LLC and Universita
Degli Studi di Cagliari

Dated: February 23, 2017

EXHIBIT 1

**REDACTED IN
ITS ENTIRETY**

EXHIBIT 2

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

IDENIX PHARMACEUTICALS LLC, and)
UNIVERSITA DEGLI STUDI DI CAGLIARI,)
Plaintiffs,)
v.) Civil Action No. 14-846-LPS
GILEAD SCIENCES, INC.,)
Defendant.)

DECLARATION OF ANDREW W. CARTER

I, Andrew W. Carter, hereby declare:

1. I am a founder of Ocean Tomo, LLC (“Ocean Tomo”). Ocean Tomo was retained by counsel for Idenix Pharmaceuticals, LLC and Universita Degli Studi di Cagliari (collectively “Idenix”) to provide expert opinions and testimony in connection with the above captioned matter. I previously submitted expert reports and testimony in this matter which outlined my background and qualifications. A current version of my curriculum vitae is attached to this declaration as Exhibit 1.

2. I have personal knowledge of all the calculations set herein, and if called as a witness could and would competently testify to them under oath. Through my past work as a damages expert in this litigation, I have knowledge of the relevant parties, damages theories, damages calculations, supporting documentation, fact and expert testimony and Court findings.

Highly Confidential – Attorneys’ Eyes Only

To the extent necessary, I have relied on that knowledge in the preparation of this declaration and the supporting calculations.

3. On December 15, 2016, the jury returned a verdict in favor of Idenix and against Defendant Gilead Sciences, Inc. (“Gilead”) finding certain claims of U.S. Patent No. 7,608,597 (“the ’597 Patent”) to be valid and willfully infringed by Gilead. The jury awarded Idenix a running royalty of 10% on a royalty base of \$25.4 billion for reasonable royalty damages of \$2.54 billion for Gilead’s U.S. sales of Sovaldi® and adjusted sales of Harvoni® through August 2016.¹

4. On January 26, 2017, the Court entered a judgment in favor of Idenix and against Gilead for damages in the amount of \$2,540,000,000.²

5. I understand that Idenix now seeks (a) an award of supplemental damages from September 1, 2016 through January 26, 2017 (the date of the entry of the judgment), (b) an award of prejudgment interest on the judgment amount and supplemental damages amount through January 26, 2017, and (c) an award of postjudgment interest. I also understand that Idenix seeks an ongoing royalty with respect to Gilead’s sofosbuvir-containing drugs.

A. Summary of Opinions

6. I have been asked by Idenix to calculate the aforementioned supplemental damages, prejudgment interest, and postjudgment interest due to Idenix, as well as opine to an ongoing royalty rate. The figure below summarizes my supplemental damages and interest calculations.

¹ Verdict Form, [Doc. 518], December 15, 2016, pp. 1-3

² Judgment Following Jury Verdict, [Doc. 533], January 26, 2017, p. 2.

Figure 1: Supplemental Damages, Prejudgment Interest, and Daily Postjudgment Interest³

(in \$USD)	<u>Total</u>
Supplemental Damages, Sovaldi & Harvoni, Sept 1, 2016-Jan 26, 2017	\$ 144,046,709
Prejudgment Interest, as of Jan 26, 2017	\$ 163,496,089
Daily Postjudgment Interest	\$ 63,777

7. It is my opinion that an appropriate ongoing running royalty due Idenix should be most conservatively 12% of adjusted net sales of drugs that contain sofosbuvir (*i.e.* Sovaldi and Harvoni). Note that this royalty does not take into account any additional legal considerations that are outside the scope of the *Georgia-Pacific* factors.

8. I understand that the ongoing royalty rate should also apply to Gilead's adjusted net sales of Epclusa, another sofosbuvir-containing drug. It is my opinion that Epclusa adjusted net sales (*i.e.* the Epclusa royalty base) should be calculated by reducing Gilead's reported Epclusa sales by 9 percent.

B. Supplemental Damages – Sovaldi & Harvoni

9. The jury's damages award reflects a 10% royalty on Gilead's adjusted sales of Sovaldi and Harvoni through August 31, 2016—the last date for which sales data was provided by Gilead as of trial. I understand that Idenix is moving for an award of reasonable royalties due to Idenix on Gilead's adjusted sales of Sovaldi and Harvoni during the period of September 1, 2016 through January 26, 2017 (the date of judgment) to compensate Idenix for Gilead's prejudgment infringement.

³ Exhibit 2.1.

10. The jury's damage award states that the royalty base is \$25.4 billion for sales through August 31, 2016, which mirrors my expert opinion provided at trial regarding the computation of the royalty base through this date. As such, I have computed the royalty base for sales made from September 1, 2016 through January 26, 2017 utilizing the same methodology.

11. To calculate the royalty base, I first summarized Sovaldi and Harvoni sales by quarter. Next, I applied a fixed 5% deduction to account for gross-to-net deductions that are not tracked on a product basis. I then made an additional adjustment to Harvoni net sales as the product includes both infringing and non-infringing compounds (i.e. sofosbuvir and ledipasvir) by applying a 11% reduction to Harvoni sales to account for the non-infringing portion of the pill.

12. Utilizing the above methodology results in a royalty base of approximately \$1.44 billion for adjusted net sales of Sovaldi and Harvoni from September 1, 2016 through January 26, 2017.⁴

13. To calculate reasonable royalty damages, I multiplied the royalty base by the 10% royalty rate that was awarded by the jury. This results in additional reasonable royalties of \$144,046,709.⁵

C. **Prejudgment Interest**

14. My calculation includes interest on damages occurring from the date of first infringement, December 6, 2013, through the date of judgment, January 26, 2017.

⁴ Exhibit 5.2.

⁵ Exhibit 5.1.

15. I have been asked to perform my prejudgment interest calculation using the prime rate and applying quarterly compounding. The prime rate is an interest rate that is commonly charged by the largest U.S. banks to their most creditworthy customers.⁶ The rate was set at 3.25% from December 6, 2013 through December 16, 2015, 3.5% from December 17, 2015 through December 14, 2016, and 3.75% from December 15, 2016 through January 26, 2017.⁷

16. The prime rate is conservative in light of Idenix's financial position at the end of 2013 (when royalties first began to accrue) until the firm was acquired by Merck in August 2014. As noted in its last available quarterly SEC filings: "We [Idenix] have incurred losses in each year since our inception and at June 30, 2014, we had an accumulated deficit of \$929.0 million."⁸ From Q4 2013 through Q2 2014, Idenix had negative revenue of \$29.6 million, a loss of \$93.6 million at the gross profit level, a net income of negative \$127.2 million, and negative cash flows from operations of \$84.2 million.⁹ Fitch Ratings, a global leader in credit ratings and research, states that "key elements in determining an issuer's overall financial health are earnings and cash flow,"¹⁰ both of which were negative for Idenix during the relevant time frame. Given that the prime rate

⁶ "Wall Street Journal prime rate," *Bankrate.com*, <http://www.bankrate.com/rates/interest-rates/wall-street-prime-rate.aspx>. See also *Till v. SCS Credit Corp.*, 541 U.S. 465, 479, 124 S. Ct. 1951, 158 L. Ed. 2d 787 (2004), which notes that the prime rate "reflects the financial market's estimate of the amount a commercial bank should charge a creditworthy commercial borrower to compensate for the opportunity costs of the loan, the risk of inflation and the relatively slight risk of default."

⁷ "Data Download Program," *Board of Governors of the Federal Reserve System*, <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15>.

⁸ Idenix SEC Form 10-Q for the quarterly period ended June 30, 2014, p. 23.

⁹ Exhibit 11.1. I note that a review of Idenix's balance sheet indicates that the firm did not have any debt on its books. See Idenix SEC Form 10-Q for the quarterly period ended June 30, 2014, p. 3.

¹⁰ Timothy Greening, Trevor Pitman, Daniel R. Kastholm, CFA, Tony Stringer, "Corporate Rating Methodology," *Fitch Ratings*, June 13, 2006, http://pages.stern.nyu.edu/~igiddy/articles/corporate_ratings.pdf, p. 3; "Fitch Group," *Fitch Ratings*, <https://www.fitchratings.com/site/about>.

is the rate given to a bank's most creditworthy customers, Idenix's financial history would indicate an interest rate greater than prime rate would be appropriate.

17. Additionally, I note that Merck (the parent company of Idenix) had outstanding debt during the time during which royalties were accruing. As shown in the figure below, in 2014, Merck had approximately \$18.7 billion in long-term debt, with at least \$7.2 billion being borrowed at interest rates higher than the prime rate of 3.25% that was in effect in 2014. Similarly, in 2015, Merck had approximately \$23.9 billion in long-term debt, with at least \$9.2 billion being borrowed at interest rates higher than the prime rates of 3.25% and 3.5% that were in effect in 2015. Furthermore, Merck notes that “[w]ith the exception of the 6.30% debentures due 2026, the notes listed in the table [below] are redeemable in whole or in part, at Merck's option at any time, at varying redemption prices.”¹¹

¹¹ Merck & Co., Inc., SEC Form 10-K for the fiscal year ended December 31, 2015, p. 103.

Figure 2: Merck's Long-Term Debt, 2014 and 2015¹²

Long-Term Debt at December 31 consisted of:	2014	2015
2.75% notes due 2025	\$ -	\$ 2,496
3.70% notes due 2045	-	1,989
2.80% notes due 2023	1,749	1,749
5.00% notes due 2019	1,291	1,285
4.15% notes due 2043	1,246	1,247
1.85% notes due 2020	-	1,243
2.35% notes due 2022	-	1,237
3.875% notes due 2021	1,150	1,161
1.125% euro-denominated notes due 2021	1,218	1,096
1.875% euro-denominated notes due 2026	1,210	1,090
2.40% notes due 2022	1,000	1,014
Floating-rate borrowing due 2018	1,000	1,000
1.10% notes due 2018	999	999
1.30% notes due 2018	984	987
6.50% notes due 2033	812	809
Floating-rate notes due 2020	-	700
6.55% notes due 2037	597	596
2.50% euro-denominated notes due 2034	603	543
3.60% notes due 2042	493	493
5.85% notes due 2039	418	418
5.75% notes due 2036	371	371
5.95% debentures due 2028	356	356
6.40% debentures due 2028	326	326
Floating-rate notes due 2017	-	300
6.30% debentures due 2026	152	152
0.70% notes due 2016	998	-
2.25% notes due 2016	858	-
Floating-rate borrowing due 2016	500	-
Other	368	272
Total Long-Term Debt (in millions)	<u>\$ 18,699</u>	<u>\$ 23,929</u>
Long-Term Debt with Interest Rates Above Prime (in millions)	<u>\$ 7,212</u>	<u>\$ 9,203</u>

18. Additionally, during the damages period, Merck was redeeming and issuing debt at interest rates that were greater than the aforementioned prime rates. For example, in November 2014, Merck redeemed \$1.0 billion 4.00% notes that were due in 2015 and \$1.0 billion 6.00%

¹² Merck & Co., Inc., SEC Form 10-K for the fiscal year ended December 31, 2015, p. 103. I note that the 2016 Merck 10-K is not yet available. The most current publicly available Merck quarterly financial (as of the date of this declaration) indicates that Merck had approximately \$23.7 billion in long-term debt as of September 30, 2016. However, the interest rates are not provided in the quarterly SEC filing. See Merck & Co., Inc., SEC Form 10-Q for the fiscal quarter ended September 30, 2016, p. 3.

notes that were due in 2017. In February 2015, Merck issued \$2.0 billion aggregate principal amount of 3.70% notes due in 2045.¹³

19. I utilized a mid-period convention to the quarterly royalty payments, which assumes that the royalty payments are earned equally throughout the quarter, as opposed to at the beginning or the end of the quarter.

20. Applying the prime rate compounded quarterly to the jury's \$2,540,000,000 damages award and the supplemental damages of \$144,046,709 results in total prejudgment interest of \$163,496,089 as of January 26, 2017.¹⁴

D. Postjudgment Interest

21. I have been asked to calculate the postjudgment interest at the rate as provided in 28 U.S.C. § 1961(a) which states “[s]uch interest shall be calculated from the date of the entry of the judgment, at a rate equal to the weekly average 1-year constant maturity Treasury yield, as published by the Board of Governors of the Federal Reserve System, for the calendar week preceding...the date of the judgment.”¹⁵ As the date of judgment is January 26, 2017, the weekly average 1-year constant maturity Treasury yield for the preceding week was 0.82%.¹⁶

22. In accordance with U.S.C. § 1961(b), I have computed the daily postjudgment interest utilizing annual compounding.¹⁷ My postjudgment interest calculation includes interest

¹³ Merck & Co., Inc., SEC Form 10-K for the fiscal year ended December 31, 2014, p. 65.

¹⁴ Exhibit 3.1.

¹⁵ U.S.C. § 1961(a).

¹⁶ Exhibit 7.1.

¹⁷ U.S.C. § 1961(b).

on total damages of \$2,847,542,799 which includes the \$2,540,000,000 in damages awarded by the jury, \$144,046,709 in supplemental damages, and \$163,598,703 in prejudgment interest. This results in \$63,777 in daily postjudgment interest for the first year following the date of judgment.¹⁸

E. Ongoing Damages - Royalty Rate

23. In my expert report dated February 2, 2016, I opined to a reasonable royalty rate of 10% on Gilead's (adjusted) net sales of drugs that contain sofosbuvir.¹⁹ My royalty opinion was based on an evaluation of fifteen *Georgia-Pacific* factors assuming a hypothetical negotiation between Idenix and Gilead around the time of the first commercial sale of sofosbuvir in December 2013, the hypothetical negotiation date.²⁰ I understand that when assessing an ongoing royalty rate, it is appropriate to evaluate the changes in the parties' bargaining positions post-verdict and the resulting change in economic circumstances. I focus my discussion below on the *Georgia-Pacific* factors where changes in circumstances would impact the ongoing royalty rate.²¹

Georgia-Pacific Factor #2: The rates paid by the licensee for the use of other patents comparable to the patent-in-suit.

Georgia-Pacific Factor #12: The portion of the profit or the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.

24. In forming my reasonable royalty opinion of 10% for a hypothetical negotiation in December 2013, I relied in part on two comparable license agreements: 1) the Pharmasset-Roche

¹⁸ Exhibit 7.1.

¹⁹ Initial Expert Report, p. 3.

²⁰ Initial Expert Report, pp. 23, 28, 85-105.

²¹ I note that the *Georgia-Pacific* Factors not discussed herein have not materially changed.

Agreement;²² and 2) the Merck-Roche License.²³ The royalty ranges in these two licenses were

[REDACTED] I considered these agreements under *Georgia-Pacific* Factors #2 and #12.

25. One notable change in circumstance from December 2013 to January 2017 is the ownership of Idenix. As of August 5, 2014, Idenix became a wholly-owned subsidiary of Merck.²⁴ Therefore, as of January 2017, Merck--the licensee in the Merck-Roche License--is now a related entity to Idenix. In the hypothetical negotiation in December 2013, Idenix was more similarly positioned to Pharmasset in the Pharmasset-Roche Agreement than Merck in the Merck-Roche License.²⁵ However, as of January 2017, the inverse is now true: Idenix, as a wholly-owned subsidiary of Merck, is more similarly positioned to Merck in the Merck-Roche License than Pharmasset in the Pharmasset-Roche Agreement.

26. The Merck-Roche License contained royalty rates of [REDACTED].²⁶ As illustrated in the figure below, in the Merck-Roche License, the [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

²² See Initial Expert Report, Section 13.5. See also Section 13.5.4.5 on p. 51.

²³ See Initial Expert Report, Section 13.8. See also Section 13.8.5 on p. 71.

²⁴ "Merck Completes Tender Offer to Acquire Idenix," *Merck*, August 5, 2014, <http://www.mercknewsroom.com/news-release/corporate-news/merck-completes-tender-offer-acquire-idenix>.

²⁵ For example, in my Initial Expert Report, I noted the following: "At the time of the Pharmasset-Roche Agreement in October 2004, Pharmasset was a pre-clinical-stage pharmaceutical company, with no commercial products on the market and only a few compounds in development with less than \$3 million in revenue in 2004...Similarly, at the time of the hypothetical negotiation [in December 2013], Idenix was a "biopharmaceutical company engaged in the discovery and development of drugs for the treatment of human viral diseases" with less than \$1 million in revenue in 2013." See Initial Expert Report, p. 50.

²⁶ See Initial Expert Report, Section 13.8. See also Section 13.8.5 on p. 71; PX-1606 at 5.

as stated in my Initial Expert Report, given that the hypothetical negotiation contemplates a ‘bare’ patent license and covers products covered by the asserted claims made, used, sold, or offered for sale in the United States, the most probative reasonable royalty indicator of the royalties listed in the Merck-Roche License is the [REDACTED]

27

Figure 3: Merck-Roche License Royalty Structure²⁸

27. However, as discussed in my Initial Expert Report, the Merck-Roche License was executed [REDACTED].²⁹ It is my opinion that the evidence, as discussed in further detail in my Initial Expert Report, indicates [REDACTED]

²⁷ See Initial Expert Report, Section 13.8. See also Section 13.8.5 on p. 71.

²⁸ PX-1606 at 5.

²⁹ See Initial Expert Report, p. 71.

³⁰ See Initial Expert Report, p. 71.

[REDACTED]

31

28. Similarly, in a letter dated May 27, 2011, Roche communicated to Pharmasset that [REDACTED]

[REDACTED]

32

29. As the change in circumstance strengthens the relevance of the Merck-Roche License, this indicates that the ongoing royalty rate should be conservatively 12% of adjusted sales.

Georgia-Pacific Factor #5: The commercial relationship between the licensor and licensee, such as, whether they are competitors in the same territory in the same line of business; or whether they are inventor and promoter.

30. *Georgia-Pacific* Factor # 5 evaluates the commercial relationship between the licensor and the licensee. As stated in my Initial Expert Report, licenses to competitors generally contain a higher royalty rate to compensate for the risk of lost sales and/or market share.³³ In January 2017, the parties would recognize that Idenix's parent company, Merck, has a drug on the

³¹ PX-1603 at 3. Emphasis added.

³² GILEAD03722114-116 at 115. Emphasis added.

³³ Initial Expert Report, p. 87.

market that directly competes with Gilead's HCV drugs. While around the time of the December 2013 hypothetical negotiation, "Gilead's 7977 (sofosbuvir) compound was considered to be in direct competition to Idenix's own nucleoside development efforts,"³⁴ now granting a license to Gilead would result in immediate lost sales and/or market share of Merck's Zepatier product.

31. On January 28, 2016, Merck's Zepatier was approved by the FDA with or without ribavirin for the treatment of chronic HCV genotypes 1 and 4 infections in adult patients, with or without Cirrhosis.³⁵ It is estimated that patients with genotype 1 and 4 could account for 75%-80% of Americans with HCV.³⁶ The figure below reflects the current Zepatier dosage regimens and durations approved by the FDA:

³⁴ See Initial Expert Report, p. 87.

³⁵ "FDA approves Zepatier for treatment of chronic hepatitis C genotypes 1 and 4," *FDA*, January 28, 2016, <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm483828.htm>.

³⁶ It is estimated that approximately 75% of Americans with HCV have genotype 1; while 20-25% have genotypes 2 or 3; and "small numbers of patients are infected with genotypes 4, 5, or 6." See "FDA approves Epclusa for treatment of chronic Hepatitis C virus infection," *FDA*, June 28, 2016, <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm508915.htm>.

Figure 4: Zepatier Label – Dosage and Administration³⁷

Dosage Regimens and Durations for ZEPATIER in Patients with Genotype 1 or 4 HCV with or without Cirrhosis		
Patient Population	Treatment	Duration
Genotype 1a: Treatment-naïve or PegIFN/RBV-experienced* <u>without</u> baseline NS5A polymorphisms [†]	ZEPATIER	12 weeks
Genotype 1a: Treatment-naïve or PegIFN/RBV-experienced* <u>with</u> baseline NS5A polymorphisms [†]	ZEPATIER + ribavirin	16 weeks
Genotype 1b: Treatment-naïve or PegIFN/RBV-experienced*	ZEPATIER	12 weeks
Genotype 1a or 1b: PegIFN/RBV/PI-experienced [‡]	ZEPATIER + ribavirin	12 weeks
Genotype 4: Treatment-naïve	ZEPATIER	12 weeks
Genotype 4: PegIFN/RBV-experienced*	ZEPATIER + ribavirin	16 weeks

*Peginterferon alfa + ribavirin.
†Polymorphisms at amino acid positions 28, 30, 31, or 93.
‡Peginterferon alfa + ribavirin + HCV NS3/4A protease inhibitor.

32. A review of the FDA approved indications demonstrates the overlap in the patient population of Merck's Zepatier with the patient population of Gilead's Sovaldi and Harvoni. For genotype 1 and 4, Sovaldi is approved in combination with peg-interferon alfa and ribavirin for a duration of 12 weeks.³⁸ For genotype 1 and 4, Harvoni is approved with or without ribavirin, for treatment-naïve or treatment-experienced patients, with or without Cirrhosis, as shown in the following figure:

³⁷ "Highlights of Prescribing Information: Zepatier," *Merck*, Revised 01/2017, https://www.merck.com/product/usa/pi_circulars/z/zepatier/zepatier_pi.pdf.

³⁸ "Highlights of Prescribing Information: Sovaldi," *Gilead*, Revised 08/2015, http://www.gilead.com/~/media/Files/pdfs/medicines/liver-disease/sovaldi/sovaldi_pi.pdf. Sovaldi is also approved with ribavirin for treatment of genotype 2 for 12 weeks and genotype 3 for a duration of 24 weeks.

Figure 5: Harvoni Label – Dosage and Administration³⁹

	Patient Population	Regimen and Duration
Genotype 1	Treatment-naïve without cirrhosis or with compensated cirrhosis (Child-Pugh A)	HARVONI 12 weeks
	Treatment-experienced without cirrhosis	HARVONI 12 weeks
	Treatment-experienced with compensated cirrhosis (Child-Pugh A)	HARVONI 24 weeks
	Treatment-naïve and treatment-experienced with decompensated cirrhosis (Child-Pugh B or C)	HARVONI + ribavirin 12 weeks
Genotype 1 or 4	Treatment-naïve and treatment-experienced liver transplant recipients without cirrhosis, or with compensated cirrhosis (Child-Pugh A)	HARVONI + ribavirin 12 weeks
Genotype 4, 5, or 6	Treatment-naïve and treatment-experienced without cirrhosis or with compensated cirrhosis (Child-Pugh A)	HARVONI 12 weeks

33. A review of publicly available articles and studies indicates that Merck's Zepatier competes with Gilead's Sovaldi and Harvoni. As one example, an article from February 2016 discusses the comparability of Harvoni and Zepatier and the competition between the two drugs for patients with HCV genotypes 1 and 4:

“However, Daian Cheng, Ph.D., GlobalData’s Analyst covering Infectious Diseases, states that now Zepatier has been approved, it will threaten Harvoni’s leading commercial position for patients infected with hepatitis C virus genotypes 1 and 4.

Cheng comments: ‘Despite differences in small patient populations, such as those with end-stage renal or liver diseases, Zepatier is highly comparable to Harvoni in clinical performance, as well as dosing convenience.

‘Thus, the main reason it poses such a threat to Harvoni is its lower cost. Merck has listed Zepatier at a price over 40% lower than that of Harvoni, which should help the company gain patient share for this late-to-market product.’

As well as challenging Harvoni’s lead in the hepatitis C market, Zepatier will affect other drugs similarly priced to Harvoni, and offer solid clinical profiles, such as Gilead’s Sovaldi, and AbbVie’s Viekira Pak.

³⁹ “Highlights of Prescribing Information: Harvoni,” Gilead, Revised 06/2016, https://www.gilead.com/~/media/Files/pdfs/medicines/liver-disease/harvoni/harvoni_pi.pdf.

Cheng explains: ‘Zepatier will quickly carve out a solid niche in the hepatitis C market due to the way in which it marries brilliant product performance in its efficacy, safety, and cost. However, the response of competitors in price negotiation with payers, especially Gilead, will impact the extent of Zepatier’s market penetration.’”⁴⁰

34. Similarly, an article from May 2016 states that Merck’s pricing strategy for Zepatier “has made it a thorn in the side for both Gilead Sciences (\$GILD) and AbbVie (\$ABBV), its main competitors--both of which reported lower-than-expected hep C sales for the period.”⁴¹

35. As another example, a 2016 study conducted by *Advera Health Analytics*, compared Zepatier to Sovaldi and Harvoni. The study found that Zepatier “appears to have a less risky safety profile than Sovaldi (sofosbuvir) and a similar safety profile as Harvoni (sofosbuvir and ledipasvir).”⁴² The study also notes that “[a]s a standalone therapy, Harvoni appears more effective in Treatment Naïve patients and both Zepatier and Harvoni seem to have similar efficacy in Treatment Experienced patients through various clinical trials.”⁴³ The study also notes that Zepatier is “strategically less expensive than its competitors Sovaldi, Harvoni, and Viekira Pak” with a list price of \$54,600 for a 12-week course.

36. As discussed below, Gilead’s third sofosbuvir-containing product, Epclusa, was approved on June 28, 2016.⁴⁴ Epclusa was approved for the treatment of adult patients with chronic HCV genotype 1, 2, 3, 4, 5 or 6 infection: 1) without cirrhosis or with compensated

⁴⁰ “Hepatitis C Market: Merck & Gilead Compete for Dominance,” *PharmaPro*, February 2016, <http://www.pharmpro.com/news/2016/02/hepatitis-c-market-merck-gilead-compete-dominance>.

⁴¹ Helfand, Carly, “Merck’s ‘aggressive’ hep C pricing helps it steal share in Q1,” *FiercePharma*, May 2, 2016, <http://www.fiercepharma.com/marketing/merck-s-aggressive-hep-c-pricing-helps-it-steal-share-q1>.

⁴² “Drug Evidence Review: Zepatier vs. Sovaldi and Harvoni,” *Advera Health Analytics*, 2016, p. 1.

⁴³ “Drug Evidence Review: Zepatier vs. Sovaldi and Harvoni,” *Advera Health Analytics*, 2016, p. 1.

⁴⁴ “FDA approves Epclusa for treatment of chronic Hepatitis C virus infection,” *FDA*, June 28, 2016, <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm508915.htm>.

cirrhosis; and 2) with decompensated cirrhosis for use in combination with ribavirin.⁴⁵ As Epclusa, like Zepatier, is approved for use in patients with HCV genotypes 1 and 4, it is another Gilead HCV drug that may compete with Merck's Zepatier drug.

37. Given the increased level of competition between Idenix and Gilead and the immediate impact of lost sales to Idenix's parent company, this factor would suggest a higher ongoing royalty rate than the 10% royalty rate resulting from a hypothetical negotiation in December 2013.

Georgia-Pacific Factor #7: The duration of the patent and the term of the license.

38. Given the expiration of the '597 patent on May 23, 2021, as of January 2017, I consider this to be a short-term license as the term of the license would be approximately 4 years. While long-term, non-exclusive licenses tend to have lower rates so as not to incentivize the licensee to design around the patented technology, implement an alternative technology or otherwise discontinue sales of a licensed product, short-term licenses tend to have higher rates. Therefore, given the change in the duration of the license from an intermediate-to long-term license in the December 2013 hypothetical negotiation⁴⁶ to a short-term license as of January 2017, I believe this factor would tend to weigh in favor of a higher ongoing royalty rate than the royalty rate resulting from a hypothetical negotiation in December 2013.

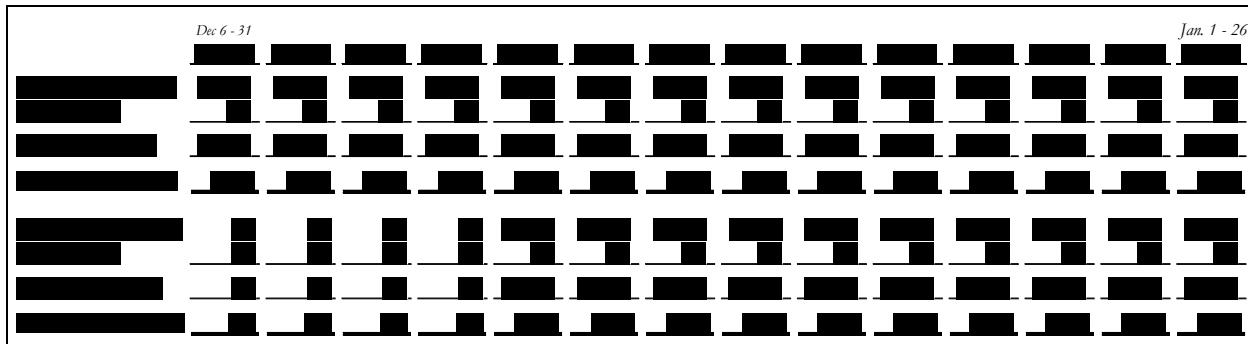
⁴⁵ "Highlights of Prescribing Information: Epclusa," FDA, Revised 06/2016, http://www.accessdata.fda.gov/drugsatfda_docs/label/2016/208341s000lbl.pdf.

⁴⁶ See Initial Expert Report, p. 90.

Georgia-Pacific Factor #8: The established profitability of the product made under the patent; its commercial success; and its current popularity.

39. In January 2017, the parties would recognize that while the net price of Sovaldi and Harvoni has decreased over time, the company continued to realize gross profit margins of approximately [REDACTED] for both products, as illustrated in the below figure. This is consistent with the expected gross profit margins of approximately [REDACTED] at the time of the December 2013 hypothetical negotiation.⁴⁷

Figure 6: Gilead's Sovaldi and Harvoni Gross Profit Margins⁴⁸



40. Given the above, there is no additional adjustment necessary to this factor to account for changes in circumstances between December 2013 to January 2017.

Georgia-Pacific Factor #15: The amount that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee – who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention – would have been willing to pay as a royalty and yet be able to make a reasonable profit and which

⁴⁷ See Initial Expert Report, p. 91.

⁴⁸ Exhibit 8.1.

amount would have been acceptable by a prudent patentee who was willing to grant a license.

41. Factor #15 describes the integration of the other factors within the willing buyer/willing seller hypothetical negotiation framework. As the name implies, the parties in the negotiation are presumed to be willing. They both seek, as businesspeople, to reach an agreement. Factor #15 requires a royalty that would allow both the licensor and the licensee to make reasonable expected economic profits. In summary, the key changes in circumstances between December 2013 and January 2017 are as follows:

- The parties would recognize that Merck's acquisition of Idenix strengthens the significance of the Merck-Roche License as a benchmark and would suggest a reasonable royalty that would be "██████████" royalty indicators found in the Merck-Roche License.
- The parties would recognize that by granting a license to Gilead, Idenix's parent company, Merck, would suffer immediate lost sales and/or market share of its competitive Zepatier HCV product.
- The hypothetical license would now be a short-term license with a term of approximately 4 years.

42. Based on the changes in economic circumstances and the parties' relative bargaining positions from December 2013 to January 2017, it is my opinion that the appropriate ongoing running royalty rate should be, conservatively, 12% of Gilead's adjusted net sales of sofosbuvir-based products. Note that this royalty does not take into account any additional legal considerations that are outside the scope of the *Georgia-Pacific* factors.

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F. Ongoing Damages – Epclusa

43. I understand that, in addition to Sovaldi and Harvoni, Gilead's sales of Epclusa, a sofosbuvir containing drug that was approved on June 28, 2016,⁴⁹ should be included as part of Idenix's claim for ongoing damages. As such, I have been asked to opine to the general methodology to compute the Epclusa royalty base.

44. Consistent with the computation of the Sovaldi and Harvoni royalty base, first I would apply a fixed 5% deduction to account for gross-to-net deductions that are not tracked on a product basis.

45. Similar to Harvoni, I would then make an additional adjustment to Epclusa net sales as the product includes both infringing and non-infringing compounds (i.e. sofosbuvir and velpatasvir).⁵⁰ Like Gilead's marketing materials for Harvoni, Gilead's marketing materials for Epclusa describe the infringing sofosbuvir compound as being the "backbone" for the treatment.⁵¹ Velpatasvir (the non-infringing compound in Epclusa) and ledipasvir (the non-infringing compound in Harvoni) are both NS5A inhibitors.⁵² Also, as is the case with Harvoni, the non-infringing compound in Epclusa is only FDA approved as part of the Epclusa tablet and is not sold as a standalone product.⁵³

⁴⁹ "FDA approves Epclusa for treatment of chronic Hepatitis C virus infection," *FDA*, June 28, 2016, <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm508915.htm>.

⁵⁰ "FDA approves Epclusa for treatment of chronic Hepatitis C virus infection," *FDA*, June 28, 2016, <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm508915.htm>.

⁵¹ "Epclusa," *Gilead*, 2016, <http://hcp.epclusainfo.com/>; "Harvoni," *Gilead*, 2016, <https://hcp.harvoni.com/>.

⁵² "Highlights of Prescribing Information: Harvoni," *Gilead*, Revised 06/2016, https://www.gilead.com/~/media/Files/pdfs/medicines/liver-disease/harvoni/harvoni_pi.pdf; "Highlights of Prescribing Information: Epclusa," *FDA*, Revised 06/2016, http://www.accessdata.fda.gov/drugsatfda_docs/label/2016/208341s000lbl.pdf.

⁵³ "Search Results for Proprietary Name, Active Ingredient of Application Number: velpatasvir," *FDA*.

46. As discussed in my Initial Expert Report, several license agreements in the HCV industry address how net sales for combination products that include both licensed and non-licensed compounds should be adjusted.⁵⁴ As one example, the Pharmasset-Roche Agreement

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]⁵⁵ For the reasons discussed below, I have adjusted Epclusa net sales by the ratio of the Sovaldi price after discounts in the period prior to Epclusa's launch to the Epclusa price after discounts at the time of its launch. [REDACTED]

[REDACTED]

[REDACTED]

47. As with Harvoni, my analysis of Epclusa is focused on isolating the value of sofosbuvir in Epclusa. Epclusa launched in June 2016 at a list price of \$74,760 for a 12-week therapy, which is below Sovaldi's list price.⁵⁶ Sovaldi's list price of \$84,000 for a 12-week treatment was set when the product launched in December 2013.⁵⁷ At the time of Epclusa's launch in June 2016, Sovaldi's list price remained unchanged from the list price that was set at the time Sovaldi was launched.⁵⁸ However, changes in the pricing in the HCV market (discussed below) from the time Sovaldi's list price was set in December 2013 to when the list price was set for

⁵⁴ See Section 11.2.2 of my Initial Expert Report.

⁵⁵ GILEAD03272945-030 at 969-970.

⁵⁶ Max Nisen, "Gilead Reverses Price Course," *Bloomberg L.P.*, June 29, 2016, <https://www.bloomberg.com/gadfly/articles/2016-06-29/gilead-epclusa-price-a-sign-of-industry-change>.

⁵⁷ Deposition testimony of James Meyers, Senior Vice President of North American Commercial Organization, Gilead Sciences, June 10, 2015, p. 224:4-19.

⁵⁸ "Gilead Reverses Price Course," *Bloomberg L.P.*, June 29, 2016, <https://www.bloomberg.com/gadfly/articles/2016-06-29/gilead-epclusa-price-a-sign-of-industry-change>.

Epclusa in June 2016 indicate that comparing Sovaldi's and Epclusa's list prices would not isolate the value of sofosbuvir.

48. First, by June 2016 the HCV market included lower priced competitive HCV drugs. In January 2016, Merck launched Zepatier® at a list price of \$54,600 for a 12-week course of treatment.⁵⁹ Zepatier's list price represented approximately a 42% discount off of Harvoni's list price.⁶⁰ The pricing strategy behind Zepatier's relatively low list price was unusual at the time as “[d]rugmakers rarely price a branded drug like this so far below competitors, even when it's late to market...because list prices -- for all the furor they provoke as they push into the high five and six figures – aren't what anyone actually pays for a drug. Insurers and pharmacy benefit managers negotiate big rebates. In the U.S., government programs such as Medicaid get significant mandatory rebates. Drugmakers tend to start high and quietly negotiate down from there.”⁶¹ However, Merck priced Zepatier at a price that was similar to the prices paid after discounts for competing drugs, rather than privately cutting prices through negotiations.⁶² For example, in

⁵⁹ Max Nisen, “Merck Throws a Wrench in Drug Pricing,” *Bloomberg L.P.*, June 29, 2016, <https://www.bloomberg.com/gadfly/articles/2016-01-29/merck-zepatier-hepatitis-c-drug-price-could-be-a-game-changer>.

⁶⁰ Max Nisen, “Merck Throws a Wrench in Drug Pricing,” *Bloomberg L.P.*, June 29, 2016, <https://www.bloomberg.com/gadfly/articles/2016-01-29/merck-zepatier-hepatitis-c-drug-price-could-be-a-game-changer>.

⁶¹ Max Nisen, “Merck Throws a Wrench in Drug Pricing,” *Bloomberg L.P.*, June 29, 2016, <https://www.bloomberg.com/gadfly/articles/2016-01-29/merck-zepatier-hepatitis-c-drug-price-could-be-a-game-changer>.

⁶² Max Nisen, “Merck Throws a Wrench in Drug Pricing,” *Bloomberg L.P.*, June 29, 2016, <https://www.bloomberg.com/gadfly/articles/2016-01-29/merck-zepatier-hepatitis-c-drug-price-could-be-a-game-changer>. *See also* “Merck Zepatier Pricing,” *Natap.org*, http://www.natap.org/2016/HCV/020916_03.htm which notes “Merck set a list price for Zepatier of \$54,600 a patient for a 12-week treatment, more than 30% below the list prices for competing drugs from Gilead and AbbVie Inc., though in line with net prices for those drugs after discounts, according to Merck.” See also “Merck & Co. sets competitive list price for HCV drug Zepatier following US approval,” *First Word Pharma*, January 29, 2016, http://www.firstwordpharma.com/node/1354848?tsid=28®ion_id=2#axzz3z8MOkyDk

December 2015, [REDACTED]

[REDACTED]⁶³ which is similar to Zepatier's list price of \$54,600.

49. Secondly, Gilead's lower than expected list price for Epclusa was seen as a response to the negative attention the company faced when launching Sovaldi and Harvoni, where high prices "sparked massive uproar criticism and congressional hearings."⁶⁴ In regards to the public's negative reaction to Sovaldi's list price, in 2016, John Milligan, the CEO of Gilead, admitted to certain "failures" in setting the price of Sovaldi.⁶⁵ Many saw Gilead's lower starting price for Epclusa as a way for Gilead to preemptively incorporate "inevitable" discounts, while also minimizing the public criticism that comes with higher priced drugs.⁶⁶ Also, given the "lower-

with Citi analyst Andrew Baum commenting "we believe the discounted list pricing strategy [for Zepatier], before rebates, is necessary in this highly competitive segment."

⁶³ Exhibit 10.2.

⁶⁴ Max Nisen, "Gilead Reverses Price Course," *Bloomberg L.P.*, June 29, 2016, <https://www.bloomberg.com/gadfly/articles/2016-06-29/gilead-epclusa-price-a-sign-of-industry-change>. See also Adam Feuerstein, "Gilead Sciences Bucks Tradition, Takes 'Low Road' on New Hepatitis C Drug Price," *The Street*, June 28, 2016, <https://www.thestreet.com/story/13622949/1/gilead-sciences-bucks-tradition-takes-low-road-on-new-hepatitis-c-drug-price.html> which notes "While Gilead certainly has hepatitis C patients in mind, let's not under-estimate the strategic and business component of the Epclusa pricing decision. Gilead has been beaten up by just about everyone about the pricing of its hepatitis C drugs, so taking the 'low road' on Epclusa might take the heat off the company while also helping to secure better access and reimbursement terms with insurance companies. Competition for hepatitis C drugs has been on the rise, with price playing a big role. Merck's (MRK) hepatitis C pill Zepatier was priced at \$54,600 for a course of treatment." See also Eric Sagonowsky, "Gilead notches FDA approval for first all-genotype Hep C med, Epclusa" *Fierce Pharma*, June 28, 2016, <http://www.fiercepharma.com/pharma/gilead-s-advances-hep-c-franchise-epclusa-pricing-it-at-a-discount> which notes "Gilead's pricing decision comes as the biotech continues to face criticism over the costs of its meds, Epclusa's sticker price is in part a response to a yearlong public and political firestorm over pharmaceutical costs."

⁶⁵ LaMatta, John, "Gilead's CEO Admits to 'Failures' In Setting Price of \$1,000-a-pill Breakthrough," *Forbes*, December 8, 2016, <http://www.forbes.com/sites/johnlamatta/2016/12/08/gileads-ceo-apologetic-about-sovaldis-1000-per-pill-price-tag/#28033cc37898>.

⁶⁶ Max Nisen, "Gilead Reverses Price Course," *Bloomberg L.P.*, June 29, 2016, <https://www.bloomberg.com/gadfly/articles/2016-06-29/gilead-epclusa-price-a-sign-of-industry-change>

price precedent" set by Merck with its Zepatier drug, a high list price for Epclusa "would have looked particularly bad in comparison."⁶⁷

50. To be consistent with the changes in pricing for HCV drugs that took place in 2016, it is my opinion that it is more appropriate to compare Epclusa's price after discounts at the time it launched to Sovaldi's price after discounts in the period immediately prior to Epclusa's launch to isolate the value of the sofosbuvir compound in the Epclusa pill. This would appropriately capture what the parties would know at the time of Epclusa's launch about the pricing of each drug. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].⁶⁹ Therefore, I calculated an additional reduction of 4% to Epclusa sales, [REDACTED]

[REDACTED]⁷⁰

This reduction removes the value of the non-infringing compound from the Epclusa royalty base.

51. Given the two reductions discussed above (i.e. the 5% reduction for gross-to-net discounts and the 4% reduction to remove the non-infringing portion of the Epclusa pill), it is my opinion that the Epclusa royalty base for purposes of calculating an ongoing royalty should be reduced by 9%.⁷¹

⁶⁷ Max Nisen, "Gilead Reverses Price Course," *Bloomberg L.P.*, June 29, 2016, <https://www.bloomberg.com/gadfly/articles/2016-06-29/gilead-epclusa-price-a-sign-of-industry-change>

⁶⁸ Exhibit 9.1; *See also* Exhibit 10.1.

⁶⁹ Exhibit 9.1; *See also* Exhibit 10.3.

⁷⁰ Exhibit 9.1.

⁷¹ Calculated as 1 - [(1-0.05) * (1-0.04)]= 0.088.

G. Miscellaneous

52. I have been asked by Counsel to comment on Gilead's cash reserves. According to Gilead's press release, as of December 31, 2016, Gilead had \$32.4 billion of cash, cash equivalents and marketable securities.⁷²

53. I hereby declare that the above statements are true to the best of my knowledge and belief, and that I understand that the statements made herein are subject to penalty for perjury.

Chicago, Illinois
Dated: February 23, 2017

By:


Andrew W. Carter

⁷² "Gilead Sciences Announces Fourth Quarter and Full Year 2016 Financial Results," *Gilead*, February 7, 2017, <http://www.gilead.com/news/press-releases/2017/2/gilead-sciences-announces-fourth-quarter-and-full-year-2016-financial-results>.

Exhibit 1



OCEAN TOMO
INTELLECTUAL CAPITAL EQUITY

**ANDREW W. CARTER
CURRICULUM VITAE**

February 23, 2017

Andrew W. Carter is one of the founding partners, Chief Operating Officer, and head of the Expert Testimony practice of Ocean Tomo, the leading Intellectual Capital Merchant Banc® firm. The company provides services related to Intellectual Property expert testimony, valuation, investments, risk management and transactions. Ocean Tomo assists clients – corporations, law firms, governments and institutional investors – in realizing Intellectual Capital Equity® value broadly defined.

Mr. Carter's efforts at Ocean Tomo are concentrated in the areas of intellectual property damages expert witness testimony, licensing, valuation, and investment. Mr. Carter has testified in excess of 60 times. His testimony in court covers some of the most popular patent infringement forums in the country, including ED Texas, Delaware, ND California, SD NY, New Jersey, WD Wisconsin, and MD Florida. He has also provided testimony at the International Trade Commission and in Canadian Federal Court.

Prior to Ocean Tomo, Mr. Carter was one of the founders of the Duff & Phelps Capital Partners Sale/License-Back Fund. The Fund was formed to acquire, pool, and license patent portfolios in critical technology areas. Prior to the Fund, Mr. Carter was a partner at the largest U.S. consulting firm focusing on the economic, strategic, and licensing issues related to intellectual property.

Mr. Carter contributes to the intellectual property community outside of Ocean Tomo as well. For several years he was an Adjunct Professor at the Illinois Institute of Technology, teaching a masters-level course on the management of intellectual property. He is also an inventor, having filed several patent applications, and co-inventing patents 7,716,076, 8,355,932, and 8,694,419.

Mr. Carter's clients cover a wide variety of industries, including telecommunications, internet services, electronics, industrial products and processes, software, consumer products, pharmaceuticals, medical devices, financial services, securities, casinos/gaming, and entertainment. He is a frequent speaker on the financial, accounting, business, and legal issues related to intellectual property.

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Certified Public Accountant, State of Illinois, August 9, 1996.
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Arbitrator, American Arbitration Association, 2003.

Certified Licensing Professional. Certification No. 1470.

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EXPERIENCE

Co-Founder and Managing Director, Ocean Tomo, 2003 to present.

Adjunct Professor, Illinois Institute of Technology, Masters-Level Program, 2011-2015.

Principal, Duff & Phelps Capital Partners S/LB Fund, 2002 to 2003.

Managing Director, Principal, Associate, and Staff Consultant, InteCap, Inc. (formerly IPC Group), 1993 to 2002.

Special Chemical Risk Coordinator, Loss Prevention Specialist, and Loss Prevention Coordinator, Factory Mutual Engineering, 1988 to 1993.

MEMBERSHIPS

American Arbitration Association (2002 - 2005)
American Bar Association, Associate Member (1999 - present)
American Economic Association (1997 - 2002)
American Institute of Certified Public Accountants (1996 - present)
American Institute of Chemical Engineers (1993 - present)
American Statistical Association (1996 - 2002)
Illinois CPA Society (1996 - present)
Intellectual Property Owners Association (2001 - 2002)
Licensing Executives Society (1995 - present)
- Valuation & Taxation Committee Chair (2001 - 2002)
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“Patent Cross-Licenses: A Financial Asset Hedge.” *Patent Strategy & Management*, Vol. 5, No. 7, November, 2004, With Robert J. Block and Fayth A. Bloomer.

PUBLICATIONS
Continued...

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“Who Cares About Japan?” *Patent Strategy & Management*, Vol. 8, No. 2, July 2007, With Suzue Fujimori and Mark Rollins.

“Who Cares About Japan? Part Two.” *Patent Strategy & Management*, Vol. 8, No. 3, August, 2007, With Suzue Fujimori and Mark Rollins.

“Who Cares About Japan? Part Three.” i, Vol. 8, No. 9, February 2008, With Suzue Fujimori and Mark Rollins.

“No Collapse in the Market for Ideas.” featured in “A Flight to Quality” *LAM Magazine*, January/February 2009, by Nigel Page.

“Back to IP Basics With Green Energy Licensing.” Featured in *Law360*, January 9, 2009, With Trevor Blum.

“Patent Licensing After ResQNet: Has the Federal Circuit Changed the Game?” Featured in *LES Insights*, April 2011, With Cate Elsten.

“Apportionment in Reasonable Royalty Damages”, ABA 30th Intellectual Property Law Conference, March 2015. With Justin Lewis and Alexander Clemons.

“Where Do We Stand One Year After Alice?” Featured in *Law360, Voices of the Bar* series, June 17, 2015.

“With High Court Mum On Java Copyrights, Is Innovation Safe?” Featured in *Law360, Voices of the Bar* series, July 1, 2015.

“Do The Proposed AIA Rule Changes Go Far Enough?” Featured in *Law360, Voices of the Bar*, August 29, 2015.

**TESTIMONY
HISTORY**

Procter & Gamble v. Conopco, Inc., Unilever United States, Inc., Lever Brothers Company, Helene Curtis Industries, Inc., and Helene Curtis, Inc.

Civil Action No. 98-767-A

Deposition Testimony

Forensic Technology WAI, Inc., v. Mnemonic Systems, Inc.

Civil Action No. 98-924-A

Deposition Testimony

Sandra Solomon v. Kimberly-Clark Corporation

Civil Action No. CIV 96-2000 PHX RCB

Deposition Testimony

Surgical Acuity, Inc. v. General Scientific Corp.

Civil Action No. 98-C-0457-S

Trial Testimony

Concord Camera Corp., v. Fuji Photo Film Co., Ltd.

Civil Action No. 97 Civ. 9534 (DC)

Deposition Testimony

Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., et al.

Civil Action No. 2:99cv712

Deposition Testimony

Creative Products, Inc. of Rossville v. Follmer Development, Inc. and Americana Marketing, Inc.

Case No. 95-2246

Deposition Testimony

Fuji Photo Film Co., Ltd. v. Jazz Photo Corp., Jazz Photo Hong Kong Ltd. and Jack Benun

Civil Case No. 99-2937 (NHP)

Deposition and Trial Testimony

Mattel, Inc. v. Giochi Preziosi S.p.A et al.

Case No. 99-02258 VAP (RNBx)

Deposition Testimony

Nicholas V. Perricone, M.D. v. Medicis Pharmaceutical Corp.

Case No. 3:99CV 1820

Deposition Testimony

In re: AI Realty Marketing of New York, Inc., Laser Acquisition Corp. DDG I, Inc., Sunbeam Americas Holdings, Ltd., at al., Debtors.

Sunbeam Products, Inc. v. Wing Shing Products (BVI) Ltd.

Case No. 01-40252 (AJG) through 01-40290 (AJG), Adv. Pro. No. 01-2439 (AJG)

Deposition and Trial Testimony

TESTIMONY
HISTORY
Continued...

CytoLogix Corporation v. Ventana Medical Systems, Inc.
Civil Action Nos. 00-12231-REK and 01-10178-REK
Deposition Testimony

In the matter of Certain Lens-Fitted Film Packages (United States International Trade Commission)
Investigation No. 337-TA-406
Deposition and Trial Testimony

Turn-Key-Tech, LLC v. Fuji Photo Film USA and Fuji Photo Film, Ltd.
Case No. 01CV1490 L
Deposition Testimony

GE-Harris Railway Electronics, LLC, et al, v. Westinghouse Air Brake Company
Case No. 99-070 GMS
Trial Testimony

Planet Bingo, LLC v. Gametech International, Inc. v. Gary Weingardt
Case No. CV-S-01-1295-JCM(PAL)
Deposition Testimony

U.S. Philips Corporation v. Infodisc Technology USA, Inc., and Goodtimes Entertainment LLC
Case No. CV 04-10017 SWV (RZx)
Deposition Testimony

Nissim Corp. v. Clearplay, Inc., Matthew Jarman, Lee Jarman, and William Aho
Case No. 04-21140-Civ-Huck/Turnoff
United States District Court, Southern District of Florida
Deposition Testimony

Fuji Photo Film Co., Ltd. v. Jack C. Benun, Ribi Tech Products LLC, Polytech Enterprises Ltd, and Polytech (Shenzhen) Camera Co. Ltd
Case No. 2-05-CV-1863(KSH)
United States District Court, District of New Jersey
Deposition and Trial Testimony

Network -1 Security Solutions, Inc., v. D-Link Corporation and D-Link Systems, Inc.
Civil Action No. 6:05-cv-00291-LED
Deposition Testimony

Fuji Photo Film Co., Ltd. v. Achiever Industries Ltd., Achiever Group Ltd., Yet Chan, DC Tech Industry Corp., Cindy Yang, Ferrania USA, Inc., Ferrania Technologies, S.p.A., Nortek Ltd., DCS Technology Ltd., Nortek Group Ltd., and Achiever USA Corp.
Case No. CV 05-08044 JFW
United States District Court, Central District of California
Deposition Testimony

**TESTIMONY
HISTORY
Continued...**

Omega Patents, L.L.C. v. Fortin Auto Radio, Inc. and Directed Electronics, Inc.
Case No. 6:05-cv-01113-ACC-DAB
United States District Court, Middle District of Florida – Orlando Division
Deposition and Trial Testimony

Crown Packaging Technology, Inc. and Crown Cork & Seal USA, Inc. v. Ball Metal Beverage Container Corporation
Case No. 3:05-cv-0281 (WHR)
United States District Court, Southern District of Ohio – Western Division
Deposition Testimony

Michael E. Argent v. Permalok Corporation, P-L International Inc., Richard Bauman, Joseph Rolnicki, and Thompson Coburn LLP
Case No. 042-09077
United States District Court, Circuit Court of Missouri- St. Louis County
Deposition Testimony

Minka Lighting, Inc. v. Maxim Lighting International, Inc., Maxim Lighting, Inc., and Maxim Group Companies.
Case No. 3-06CV0995-K
United States District Court, Northern District of Texas-Dallas Division
Deposition Testimony

Emcore Corporation v. Optium Corporation.
Case No. 2:06-CV-01202
United States District Court, Western District of Pennsylvania.
Deposition Testimony

Interface, Inc., et al., v. Mohawk Industries, Inc., et al.
Case no. 4:05-CV-0190-HLM
United States District Court, Northern District of Georgia
Deposition Testimony

Solvay, S.A., v. Honeywell International Inc.
Case No. 06-557-SLR
United States District Court, District of Delaware
Deposition and Trial Testimony

Gemtron Corporation v. Saint-Gobain Corporation
Case No. 04-CV-0387
United States District Court, Western District of Michigan Southern Division
Deposition Testimony

Harris Corporation v. Federal Express Corporation
Case No. 6:07 – CV-1819-ORL-28 KRS
United States District Court, Middle District of Florida, Orlando
Division
Deposition Testimony

**TESTIMONY
HISTORY
Continued...**

Quickie, LLC. v. Greenberg Traurig, LLP, Thelen
Reid Brown Raysman & Steiner LLP
(f/k/a Thelen, Reid, Priest LLP) and Robert E. Krebs
Case No. 07 Civ. 10331 (RMB) (DFE)
United States District Court, Southern District New York
Deposition Testimony

The Spoilage Cutter Company Incorporated d/b/a Martor USA v. World Kitchen,
LLC
Case No. 08-CV-01263
United States District Court, Northern District of Illinois
Deposition Testimony

Emcore Corporation and JDSU Corporation v. Optium Corporation
Case No. 2:07-cv-0326
United States District Court, Western District of Pennsylvania
Deposition and Trial Testimony

Saint Gobain Autover USA, Inc., et al v. Xinyi Glass North America, Inc. et al.
Case No. 1:06 CV 2781
United States District Court, Northern District of Ohio Eastern Division
Deposition and Trial Testimony

V. Mane Fils S.A. v. International Flavors & Fragrances Inc.
Case No. 06-02304 (FLW)
United States District Court of New Jersey
Deposition Testimony

Beneficial Innovations, Inc. v. Blockdot, Inc., et al
Case No. 2:07-CV-263-TJW-CE
United States District Court, Eastern District of Texas
Deposition Testimony

Beneficial Innovations, Inc. v. AOL, LLC, et al
Case No. 2:07-CV-555-TJW-CE
United States District Court, Eastern District of Texas
Deposition Testimony

Advanced Cartridge Technologies, LLC v. Lexmark International, Inc.
Case No: 8:10-cv-00486-SDM-TGQ
United States District Court, Middle District of Florida, Tampa Division
Deposition Testimony

SkyHawke Technologies, LLC. v. GPS Industries, LLC., et al.
Case No. 08-21496-CIV (Moreno/Brown)
United States District Court, Southern District of Florida
Deposition Testimony

Geo Foundation, Ltd. v. Technical Consumer Products, Inc.
Case No. 50 133 T 00790 10
International Centre For Dispute Resolution, American Arbitration Association
Deposition and Arbitration Testimony

TESTIMONY
HISTORY
Continued...

Medisim Ltd. v BestMed, LLC
Case No. 10-CV-02463-SAS
United States District Court, Southern District of New York
Trial Testimony

Corelogic Information Solutions, Inc. v. Fiserv, Inc. et al.
Case No 2:10-cv-132-TJW
United States District Court, Eastern District of Texas (Marshall Division)
Deposition and Trial Testimony

Magna Mirrors of America, Inc. v. 3M Company, Inc.
Case No. 2:07-cv-10688
United States District Court, Eastern District of Michigan (Southern Division)
Deposition Testimony

Responsive Innovations, LLC and Turning Technologies, LLC et al. v Holtzbrinck
Publishers, LLC and MacMillian Publishers, Inc. et al.
Case No. 4:08-cv-01184-PCE
United States District Court, Northern District of Ohio (Eastern Division)
Deposition Testimony

Interface, Inc.; Interface Americas, Inc.; InterfaceFLOR LLC; and FLOR, Inc. v
Tandus Flooring, Inc. and Tandus Flooring US, LLC.
Civil Action File No. 4:13-cv-00046-WSD
United States District Court, Northern District of Georgia (Rome Division)
Deposition Testimony

comScore, Inc. v Moat, Inc.
Case No 2:12CV695-HCM/DEM
United States District Court, Eastern District of Virginia (Norfolk Division)
Deposition Testimony

Advanced Fiber Technologies (AFT) v. J & L fiber Services, Inc.
Case No. 1:07 CV-01191-LEK – DRH
United States District Court, Northern District of New York
Deposition Testimony

In the matter of Silicon Microphone Packages and Products Containing the Same
(United States International Trade Commission)
Investigation No. 337-TA-888
Deposition and Trial Testimony

Roy-G-Biv Corporation v. ABB Ltd., ABB Inc., MeadWestvaco Texas, LP, and
MeadWestvaco Corp.
Case No. 6:11-cv-00622-LED
United States District Court, Eastern District of Texas (Tyler Division)
Deposition Testimony

**TESTIMONY
HISTORY
Continued...**

Robertson Transformer Co. d/b/a Robertson Worldwide v. General Electric Company, GE Lighting LLC, H.B. Etlin Company, Ltd. a/k/a Etlin-Daniels, ARN Industries, Inc. d/b/a Halco Lighting Technologies, Hatch Transformers, Inc., Howard Industries Inc., and Keystone Technologies, LLC, and Super X Manufacturing Ltd. (Intervenor).

Case No. 1:12-cv-080904

United States District Court, Northern District of Illinois, Eastern Division
Deposition Testimony

In Re: Arbitration of Garmin International, Inc. v PhatRat Technology, LLC
JAMS Case No. 1240021597
Deposition and Arbitration Testimony

Malibu Boats, LLC v Nautique Boat Company, Inc.
Case No. 3:13-cv-00656

United States District Court, Eastern District of Tennessee
Deposition Testimony

Quest Integrity USA, LLC v A. Hak Industrial Services US, LLC
Case No. 2:14-cv-01971-RAJ
United States District Court, Western District of Washington at Seattle
Deposition Testimony

Quest Integrity USA, LLC v Cokebusters USA Inc.
Case No. 1:14-cv-01483-SLR
United States District Court, District of Delaware
Deposition Testimony

Quest Integrity USA, LLC v Clean Harbors Industrial Services, Inc.
Case No. 1:14-cv-01482-SLR
United States District Court, District of Delaware
Deposition Testimony

Bombardier Recreational Products Inc. and Arctic Cat, Inc. and Arctic Cat Sales, Inc.
Court File No. T-2025-11
Federal Court of Canada, Montreal, Quebec
Trial Testimony

L-3 Communications Holdings, Inc. and Premier Utility Services, LLC v Patents of Power Survey, LLC
Cases IPR2014-00274, IPR2014-0085, and IPR00864
Patent Trial and Appeal Board
Deposition Testimony

Gilead Sciences, Inc. v Merck & Co., Inc., Merck Sharp & Dohme Corp., and ISIS Pharmaceuticals, Inc.
Case No. 5:13-4057-BLF
United States District Court, Northern District of California, San Jose Division.
Deposition and Trial Testimony

Knapp Logistics & Automation, Inc. v R/X Automation Solutions, Inc.
Civil Action No. 14-cv-00319-RBJ
United States District Court, District of Colorado
Trial Testimony

Viva Healthcare Packaging LTD., Viva Healthcare Packaging (HK) LTD., and Viva Healthcare Packaging (USA) Inc. v CTL Packaging USA, Inc. and Tuboplast Hispania
Case No. 3:13-CV00569-MOC-DSC
United States District Court, Western District of North Carolina
Deposition Testimony

Arctic Cat, Inc. and Arctic Cat Sales, Inc. and Bombardier Recreational Products Inc.
Court File No. T-1353-13
Federal Court of Canada, Ottawa, Ontario
Trial Testimony

Realtime Data LLC d/b/a IXO, v Riverbed Technology, Inc. and Dell, Inc.
Case No. 6:15-CV-463-RWS-JDL
United States District Court, Eastern District of Texas
Hearing Testimony

Idenix Pharmaceuticals Inc. et al., v Gilead Sciences Inc. and Gilead Pharmasset LLC
Case No. 13-1987-LPS and Case No. 14-846-LPS
United States District Court, District of Delaware
Deposition and Trial Testimony

Realtime Data, LLC D/B/A IXO, v. Riverbed Technology, Inc., and Dell, Inc.
Case No. 6:15-CV-463-RWS-JDL
United States District Court, Eastern District of Texas
Deposition Testimony

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

SUMMARY OF OPINIONS

Exhibit 2.1

<i>(in \$USD)</i>	Total
[1] Supplemental Damages - Sovaldi & Harvoni, September 1, 2016 - January 26, 2017	\$ 144,046,709
[2] Prejudgment Interest, as of January 26, 2017	\$ 163,496,089
[3] Daily Postjudgment Interest	\$ 63,777

Sources and Notes:

- [1] Exhibit 5.1
- [2] Exhibit 3.1
- [3] Exhibit 7.1

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

PREJUDGMENT INTEREST - QUARTERLY COMPOUNDING - PRIME RATE

Exhibit 3.1

(\$USD in millions)	<i>Dec</i>												<i>Jan. 1 - 26</i>		
	<u>Q4 2013</u>	<u>Q1 2014</u>	<u>Q2 2014</u>	<u>Q3 2014</u>	<u>Q4 2014</u>	<u>Q1 2015</u>	<u>Q2 2015</u>	<u>Q3 2015</u>	<u>Q4 2015</u>	<u>Q1 2016</u>	<u>Q2 2016</u>	<u>Q3 2016</u>	<u>Q4 2016</u>	<u>Q1 2017</u>	<u>Total</u>
[1] Reasonable Royalty	■	■	■	■	■	■	■	■	■	■	■	■	■	\$2,684	
[2] Interest Factor	0.109	0.103	0.095	0.086	0.077	0.068	0.060	0.051	0.043	0.034	0.025	0.016	0.007	0.001	n/a
Interest as of Jan 26, 2017	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	<u>\$163.50</u>	
Total															
Prejudgment Interest, as of January 26, 2017 (\$USD)	<u><u>\$163,496,089</u></u>														

Notes:

- [1] Exhibit 4.1
- [2] Exhibit 3.2

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

INTEREST FACTOR CALCULATION - QUARTERLY COMPOUNDING - PRIME RATE

Exhibit 3.2

Interest Period	Dec 6 - 31													Jan. 1 - 26	
	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	
Q4 2013	0.14 [1][3]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.29 [2]	
Q1 2014		0.50 [3]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.29 [2]	
Q2 2014			0.50 [3]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.29 [2]	
Q3 2014				0.50 [3]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.29 [2]	
Q4 2014					0.50 [3]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.29 [2]	
Q1 2015						0.50 [3]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.29 [2]	
Q2 2015							0.50 [3]	1.00	1.00	1.00	1.00	1.00	1.00	0.29 [2]	
Q3 2015								0.50 [3]	1.00	1.00	1.00	1.00	1.00	0.29 [2]	
Q4 2015									0.50 [3]	1.00	1.00	1.00	1.00	0.29 [2]	
Q1 2016										0.50 [3]	1.00	1.00	1.00	0.29 [2]	
Q2 2016											0.50 [3]	1.00	1.00	0.29 [2]	
Q3 2016												0.50 [3]	1.00	0.29 [2]	
Q4 2016													0.50 [3]	0.29 [2]	
Q1 2017													0.14 [2][3]		
Interest Rate	Dec 6 - 31													Jan. 1 - 26	
	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	
[4] Annual Prime Rate, Average for Period	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.25%	3.29%	3.50%	3.50%	3.50%	3.55%	3.75%	
[5] Quarterly Prime Rate, Average for Period	0.81%	0.81%	0.81%	0.81%	0.81%	0.81%	0.81%	0.81%	0.82%	0.88%	0.88%	0.88%	0.89%	0.94%	
[6] Interest Factor	Dec 6 - 31													Jan. 1 - 26	
	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Interest Factor
Q4 2013	0.001	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.009	0.009	0.009	0.009	0.003	0.109
Q1 2014		0.004	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.009	0.009	0.009	0.009	0.003	0.103
Q2 2014			0.004	0.008	0.008	0.008	0.008	0.008	0.008	0.009	0.009	0.009	0.009	0.003	0.095
Q3 2014				0.004	0.008	0.008	0.008	0.008	0.008	0.009	0.009	0.009	0.009	0.003	0.086
Q4 2014					0.004	0.008	0.008	0.008	0.008	0.009	0.009	0.009	0.009	0.003	0.077
Q1 2015						0.004	0.008	0.008	0.008	0.009	0.009	0.009	0.009	0.003	0.068
Q2 2015							0.004	0.008	0.008	0.009	0.009	0.009	0.009	0.003	0.060
Q3 2015								0.004	0.008	0.009	0.009	0.009	0.009	0.003	0.051
Q4 2015									0.004	0.009	0.009	0.009	0.009	0.003	0.043
Q1 2016										0.004	0.009	0.009	0.009	0.003	0.034
Q2 2016											0.004	0.009	0.009	0.003	0.025
Q3 2016												0.004	0.009	0.003	0.016
Q4 2016													0.004	0.003	0.007
Q1 2017														0.001	0.001

Sources and Notes:

[1] There are 92 days from October 1, 2013 through December 31, 2013 and 26 days from December 6, 2013 through December 31, 2013. The period is calculated as (26/92) multiplied by 0.5 to account for mid-period convention.

[2] There are 90 days from January 1, 2017 through March 31, 2017 and 26 days from January 1, 2017 through January 26, 2017. The period is calculated as (26/90).

[3] I have utilized mid-period convention which assumes that cash flows occur evenly throughout the period with interest beginning to accrue in the middle of the period.

[4] "Data Download Program," *Board of Governors of the Federal Reserve System*, <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15>

[5] Calculated as the Annual Prime Rate / 4.

[6] The Interest Factor is calculated as $((1 + \text{Quarterly Prime Rate})^{\text{Interest Period}}) - 1$. The final Interest Factor is calculated by multiplying (1+Interest Factor) for each quarter by 1.

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

REASONABLE ROYALTY COMPENSATION FOR SOVALDI AND HARVONI BY QUARTER, DECEMBER 6, 2013 - JANUARY, 26 2017

Exhibit 4.1

(\$USD in millions)	<i>Dec 6 - 31</i>													<i>Jan. 1 - 26</i>		Total
	<u>Q4 2013</u>	<u>Q1 2014</u>	<u>Q2 2014</u>	<u>Q3 2014</u>	<u>Q4 2014</u>	<u>Q1 2015</u>	<u>Q2 2015</u>	<u>Q3 2015</u>	<u>Q4 2015</u>	<u>Q1 2016</u>	<u>Q2 2016</u>	<u>Q3 2016</u>	<u>Q4 2016</u>	<u>Q1 2017</u>		
[1] Reasonable Royalty Compensation																\$2,684

Sources and Notes:

[1] Exhibit 6.1; Exhibit 5.1.

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

SUPPLEMENTAL DAMAGES FOR SOVALDI AND HARVONI BY QUARTER, SEPTEMBER 1, 2016 - JANUARY 26, 2017

Exhibit 5.1

(\$USD in millions)	<i>Sept. 1 - 30</i>		<i>Jan. 1 - 26</i>		<u>Total</u>
	<u>Q3 2016</u>	<u>Q4 2016</u>	<u>Q1 2017</u>		
[1] Royalty Base	[REDACTED]	[REDACTED]	[REDACTED]	\$ 1,440.47	
[2] Royalty Rate	10%	10%	10%	10%	
Reasonable Royalty Compensation	[REDACTED]	[REDACTED]	[REDACTED]	\$ 144	
 Reasonable Royalty Compensation (\$USD)			Total		
			\$ 144,046,709		

Sources and Notes:

- [1] Exhibit 5.2
- [2] Verdict Form, (Docket Entry 518), December 15, 2016.

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

CALCULATION OF SOVALDI AND HARVONI SUPPLEMENTAL ROYALTY BASE, SEPTEMBER 1, 2016 - JANUARY 26, 2017

Exhibit 5.2

(\$USD in millions)	<i>Sep. 1 - 30</i>		<i>Jan. 1 - 26</i>		Total
	Q3 2016	Q4 2016	Q1 2017	Total	
[1] Sovaldi Sales	■	■	■	■	
[2] Less: 5% Net Sales Deduction	■	■	■	■	
Sovaldi Royalty Base	■	■	■	■	
[3] Harvoni Sales	■	■	■	■	
[2] Less: 5% Net Sales Deduction	■	■	■	■	
Harvoni Adjusted Sales	■	■	■	■	
[4] Royalty Multiplier	0.89	0.89	0.89	0.89	
Harvoni Royalty Base	■	■	■	■	
Total Royalty Base	■	■	■	\$1,440	

Sources and Notes:

- [1] Exhibit 10.1; Exhibit 8.1.
- [2] Appendix 4.5 of my Second Supplemental Expert Report.
- [3] Exhibit 10.2; Exhibit 8.1.
- [4] Appendix 4.3 of my Second Supplemental Expert Report.

Idenix Pharmaceuticals L.L.C., et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

REASONABLE ROYALTY COMPENSATION FOR SOVALDI AND HARVONI BY QUARTER, DECEMBER 6, 2013 - AUGUST 31, 2016

Exhibit 6.1

(\$USD in millions)	<i>Dec 6 - 31</i>											<i>Jul. 1 - Aug. 31</i>
	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016
[1] Royalty Base	■	■	■	■	■	■	■	■	■	■	■	\$25,409
[2] Royalty Rate	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Reasonable Royalty Compensation	■	■	■	■	■	■	■	■	■	■	■	\$2,541
[3] Reasonable Royalty Compensation (Rounded)	■	■	■	■	■	■	■	■	■	■	■	\$2,540

Sources and Notes:

- [1] Exhibit 6.2
- [2] Verdict Form, (Docket Entry 518), December 15, 2016.
- [3] As the Verdict Form rounds the royalty to \$2.54 billion, I have also rounded to the nearest ten million space to be consistent with the Verdict Form.

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

CALCULATION OF SOVALDI AND HARVONI ROYALTY BASE, DECEMBER 6, 2013 - AUGUST 31, 2016

Exhibit 6.2

Sources and Notes:

- [1] Exhibit 8.1; Exhibit 10.1
- [2] Appendix 4.5 of my Second Supplemental Expert Report.
- [3] Exhibit 8.1; Exhibit 10.2
- [4] Appendix 4.3 of my Second Supplemental Expert Report.

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

DAILY POSTJUDGMENT INTEREST

Exhibit 7.1

Date of Judgment	1/26/2017
[1] Annual Interest Rate	0.82%
[2] Daily Interest Rate	0.00224%

Post Judgment Interest Calculation

[3] Damages Awarded by Jury, December 6, 2013 - August 31, 2016	\$2,540,000,000
[4] Supplemental Damages, September 1, 2016 - January 26, 2016	144,046,709
[5] Prejudgment Interest	<u>163,496,089</u>
Total Prejudgment Damages	\$2,847,542,799
[6] Postjudgment Interest, Per day	\$ <u>63,777</u>

Sources and Notes:

[1] "Data Download Program," *Board of Governors of the Federal Reserve System*, <https://www.federalreserve.gov/datadownload/Download.aspx>

Yield on U.S. Treasury securities at 1-year constant maturity:

1/16/2017	ND
1/17/2017	0.80%
1/18/2017	0.82%
1/19/2017	0.83%
1/20/2017	<u>0.82%</u>
Average	0.82%

[2] Calculated as the Annual Interest Rate divided by 365

[3] Exhibit 6.1

[4] Exhibit 5.1

[5] Exhibit 3.1

[6] Calculated by multiplying Total Damages by the Daily Interest Rate

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

CALCULATION OF SOVALDI AND HARVONI GROSS MARGIN

Exhibit 8.1

	Dec 6 - 31												Jan. 1 - 26		
	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Total
[1] Sovaldi Sales (\$USD in millions)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
[1] Sovaldi Units	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Sovaldi ASP Per Bottle (\$USD)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
[2] Cost Per Bottle (\$USD)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Sovaldi Gross Profit (\$USD)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Sovaldi Gross Margin	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
[1] Harvoni Sales (\$USD in millions)	n/a	n/a	n/a	n/a	■	■	■	■	■	■	■	■	■	■	■
[1] Harvoni Units	n/a	n/a	n/a	n/a	■	■	■	■	■	■	■	■	■	■	■
Harvoni ASP Per Bottle (\$USD)	n/a	n/a	n/a	n/a	■	■	■	■	■	■	■	■	■	■	■
[2] Cost Per Bottle (\$USD)	n/a	n/a	n/a	n/a	■	■	■	■	■	■	■	■	■	■	■
Harvoni Gross Profit (\$USD)	n/a	n/a	n/a	n/a	■	■	■	■	■	■	■	■	■	■	■
Harvoni Gross Margin	n/a	n/a	n/a	n/a	■	■	■	■	■	■	■	■	■	■	■

Sources and Notes:

[1] GILEAD05244014.xls

[2] Trial Testimony of Jim Meyers, Gilead's Executive Vice President of Worldwide Commercial Operations, on December 9, 2016, p. 1324:5-14. See also Deposition Testimony of Jim Meyers, dated November 11, 2015, pp. 72:12-73:20.

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

CALCULATION OF EPCLUSUSA ADJUSTMENT FACTOR

Exhibit 9.1

[1] Epclusa ASP June 2016 (\$USD)

[2] Sovaldi Weighted ASP December 1, 2015 - May 31, 2016 (\$USD)

[REDACTED]

[3] **Epclusa Adjustment Factor**

0.04

Sources & Notes

[1] Exhibit 10.3; rounded to the nearest ten.

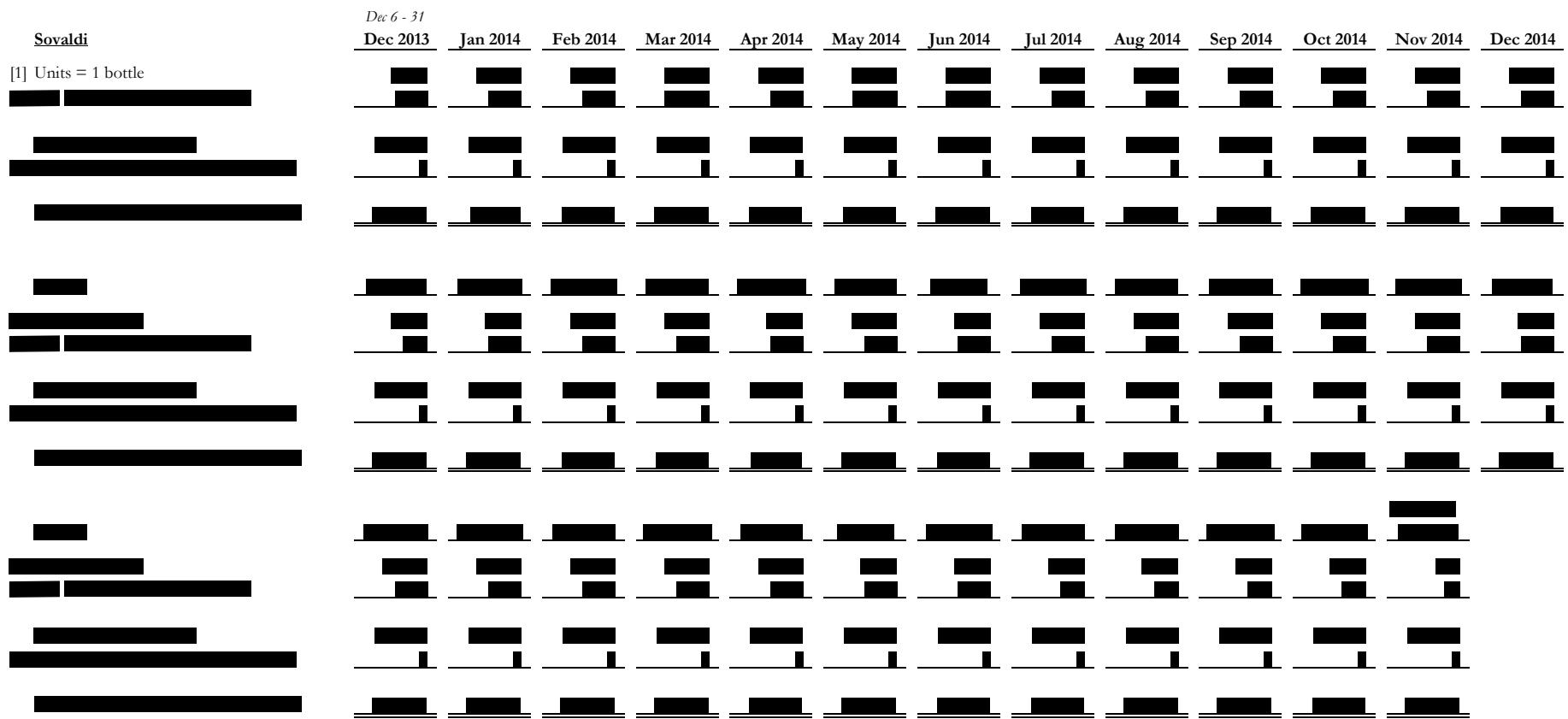
[2] Exhibit 10.1; rounded to the nearest ten.

[3] Calculated as [1- ([REDACTED])].

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

CALCULATION OF SOVALDI PRICE AFTER DISCOUNTS FOR 12-WEEK COURSE OF TREATMENT

Exhibit 10.1

**Sources & Notes**

[1] GILEAD05244014.xls

Note that "Net Revenues" is the amount that Gilead books as revenue. It is the gross revenue minus any cost of distribution, any government mandated discounts, and any discretionary discounts.

See Deposition Testimony of Jim Meyers, dated November 11, 2015, p. 34:5-11.

[2] There are 28 doses in one bottle. *See* Deposition Testimony of Jim Meyers, dated November 11, 2015, pp. 67:17-68:2.

Sovaldi is a once-daily tablet. *See* "Highlights of Prescribing Information: Sovaldi," Gilead, Revised 08/2015, http://www.gilead.com/~/media/Files/pdfs/medicines/liver-disease/sovaldi/sovaldi_pi.pdf.

Therefore, three bottles would be required for a 12-week course of treatment.

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

CALCULATION OF HARVONI PRICE AFTER DISCOUNTS FOR 12-WEEK COURSE OF TREATMENT

Exhibit 10.2

Sources & Notes

[1] GILEAD05244014.xls

Note that "Net Revenues" is the amount that Gilead books as revenue. It is the gross revenue minus any cost of distribution, any government mandated discounts, and any discretionary discounts.

See Deposition Testimony of Jim Meyers, dated November 11, 2015, p. 34:5-11.

[2] There are 28 doses in one bottle. See Deposition Testimony of Jim Meyers, dated November 11, 2015, pp. 67:17-68:2.

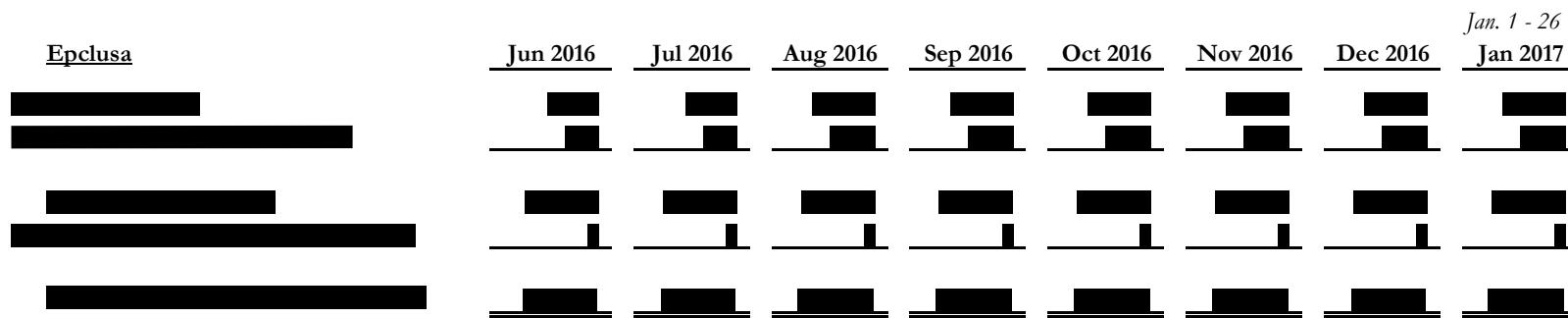
Harvoni is a once-daily tablet. See "Highlights of Prescribing Information: Harvoni," Gilead, Revised 06/2016, https://www.gilead.com/~/media/Files/pdfs/medicines/liver-disease/harvoni/harvoni_pi.pdf.

Therefore, three bottles would be required for a 12-week course of treatment.

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

CALCULATION OF EPCLUSA PRICE AFTER DISCOUNTS FOR 12-WEEK COURSE OF TREATMENT

Exhibit 10.3



Sources & Notes

[1] GILEAD05244014.xls

Note that "Net Revenues" is the amount that Gilead books as revenue. It is the gross revenue minus any cost of distribution, any government mandated discounts, and any discretionary discounts. See Deposition Testimony of Jim Meyers, dated November 11, 2015, p. 34:5-11.

[2] There are 28 doses in one bottle. See "Epclusa," *Medlibrary.org*, June 30, 2016, <http://medlibrary.org/lib/rx/meds/epclusa/page/7/>
Epclusa is a once-daily tablet. See "Highlights of Prescribing Information: Epclusa," *FDA*, http://www.accessdata.fda.gov/drugsatfda_docs/label/2016/208341s000lbl.pdf
Therefore, three bottles would be required for a 12-week course of treatment.

Idenix Pharmaceuticals LLC, et al. v. Gilead Sciences, Inc. and Gilead Pharmasset LLC

IDENIX FINANCIALS

Exhibit 11.1

<i>(\$USD in millions)</i>	Q4 2013	Q1 2014	Q2 2014	Total
Revenue	(\$0.5)	(\$3.0)	(\$26.1)	(\$29.6)
Cost of Goods Sold	18.8	21.1	24.2	64.1
Gross Profit	(\$19.3)	(\$24.1)	(\$50.3)	(\$93.6)
Operating Expenses	\$10.0	\$10.3	\$14.5	\$34.8
Non-Operating Income	0.6	0.3	0.3	1.1
Income Tax Expense	(0.1)	0.0	-	(0.1)
Net Income	<u>(\$28.7)</u>	<u>(\$34.1)</u>	<u>(\$64.5)</u>	<u>(\$127.2)</u>
Cash Flow from Operations	<u>(\$27.1)</u>	<u>(\$24.9)</u>	<u>(\$32.2)</u>	<u>(\$84.2)</u>

Sources & Notes

[1] "Idenix Pharmaceuticals," *S&P Capital IQ*

EXHIBIT 3

JONES DAY

NORTH POINT • 901 LAKESIDE AVENUE • CLEVELAND, OHIO 44114-1190
TELEPHONE: (216) 586-3939 • FACSIMILE: (216) 579-0212

Direct Number: (216) 586-7291
rbmccrum@jonesday.com

September 13, 2016

VIA EMAIL

Martina Tyreus Hufnal
Fish & Richardson P.C.
17th Floor
222 Delaware Avenue
Wilmington, Delaware 19899-1114

Re: *Idenix Pharmaceuticals, Inc., et al. v. Gilead, et al.*
Case Nos. 13-01987-LPS, 14-00109-LPS and 14-00846-LPS

Dear Martina:

I am writing regarding Gilead's obligations to supplement its discovery responses and document production pursuant to Federal Rule of Civil Procedure 26(e).

It is our understanding that the FDA has recently approved Gilead's Epclusa® as a treatment for adults with genotype 1-6 chronic HCV infection. It is also our understanding that Epclusa® is a combination of sofosbuvir and velpatasvir and Gilead is now selling Epclusa® in the United States. As a product that contains sofosbuvir, Epclusa® falls within the category of Accused Products in this litigation. *See, e.g.*, Plaintiffs' Supplemental Response to Interrogatory No. 1 ("The products accused of infringement are any products offered by Gilead that include Sofosbuvir alone or in combination ... to treat HCV."). Please immediately provide information related to Epclusa® including but not limited to the Full Prescribing Information and documents sufficient to show the actual and projected sales of Epclusa®.

As a separate issue, Gilead has produced sales information for Sovaldi® and Harvoni® only through the end of 2015. Please provide updated sales information for these products.

Very truly yours,

/s/ *Ryan B. McCrum*

Ryan B. McCrum

EXHIBIT 4



Fish & Richardson P.C.
222 Delaware Avenue
17th Floor
P.O. Box 1114
Wilmington, DE 19899-1114
302 652 5070 main
302 652 0607 fax

VIA E-MAIL

September 23, 2016

Joseph B. Warden
Associate
warden@fr.com
302 778 8424 direct

Ryan B. McCrum
Jones Day
North Point
901 Lakeside Avenue
Cleveland, Ohio 44114-1190
rbmccrum@jonesday.com

Re: *Idenix Pharmaceuticals, Inc., et al. v. Gilead Sciences, Inc., et al.*
C.A. Nos. 13-1987, 14-109 and 14-846

Dear Ryan:

We write in response to your September 13, 2016 letter and September 20, 2016 e-mail requesting production of updated sales information for Sovaldi® and Harvoni® and also seeking production of information related to Epclusa®. We are in the process of collecting the updated sales information for Sovaldi® and Harvoni®, and we will produce it as soon as it is available.

We do not agree to your request for production of new information related to Epclusa®. Epclusa® has been available for nearly three months, fact and expert discovery is closed, and trial is now less than three months away. Under the circumstances, it is too late to inject new issues into the case.

Sincerely,

/s/ Joseph B. Warden

Joseph B. Warden